FLORIDA WILDLIFE

NOVEMBER-DECEMBER 1980

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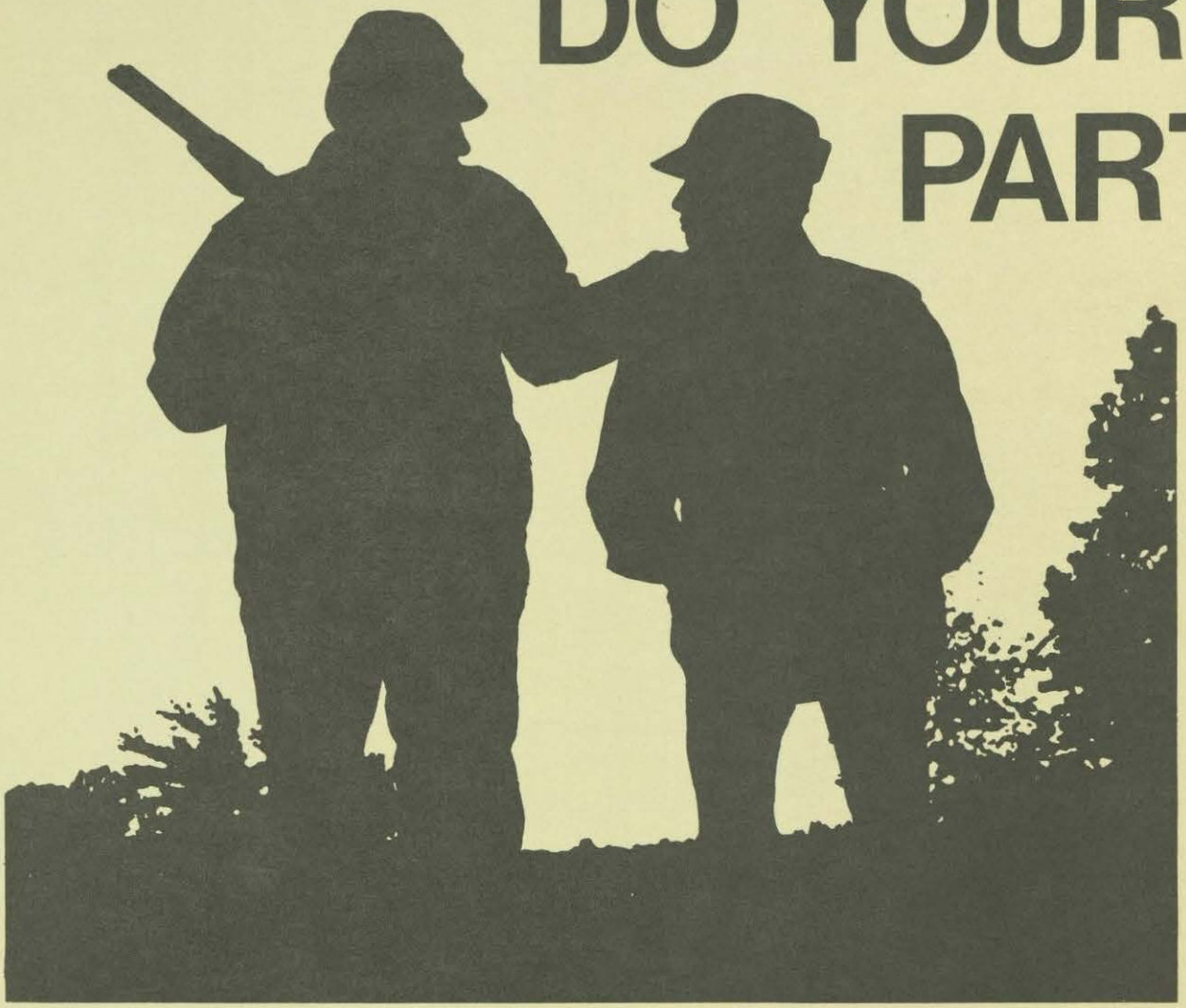

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FLORIDA WILDLIFE

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THE COVER

Are there 20 or 200 of these elusive felines left in Florida? No one knows for sure, but the Florida panther admittedly is one of the most endangered mammals in the state.
From a painting by Lee Cable

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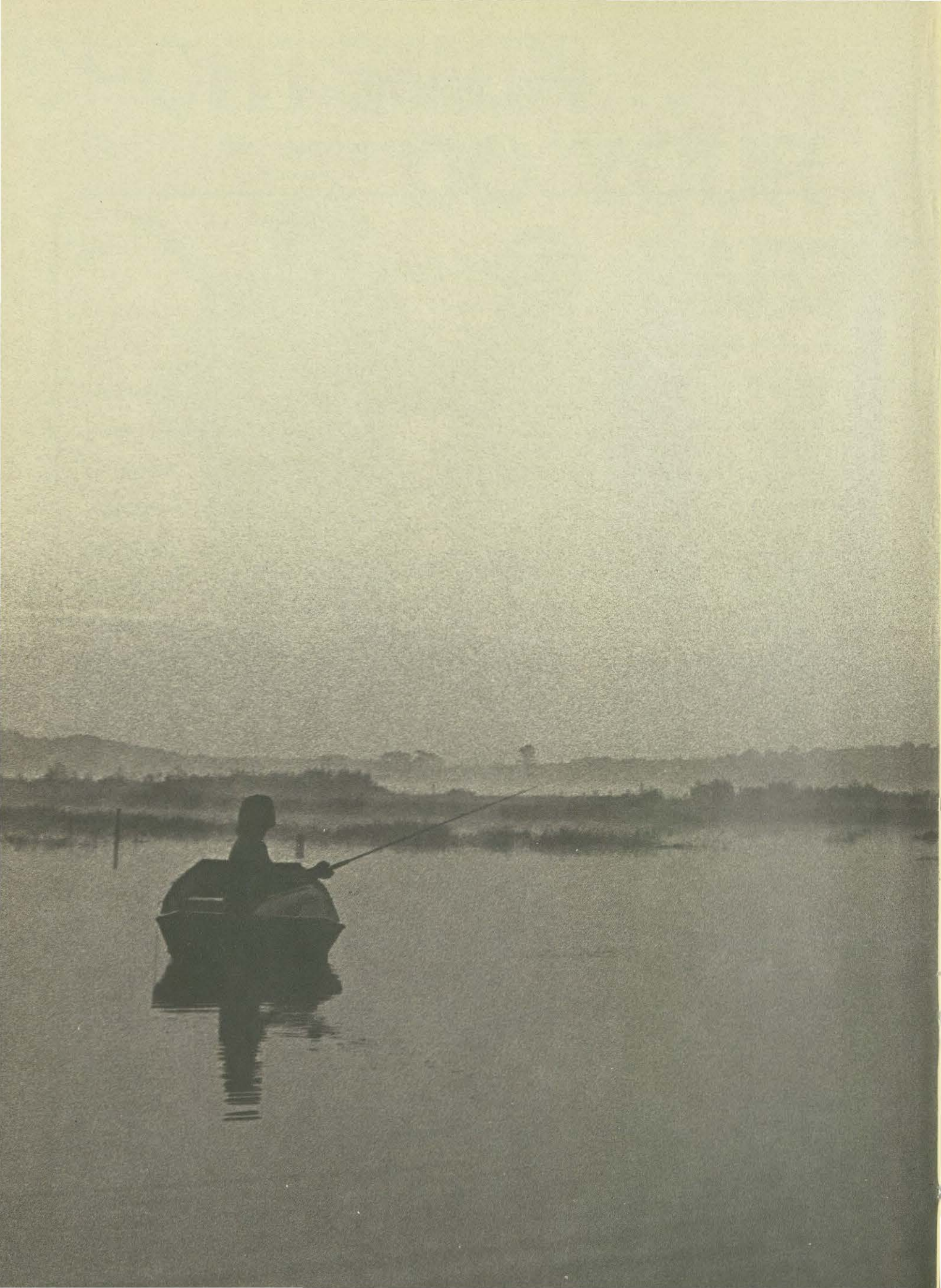


Monday Morning

hits me with the realization that five days must pass before I can again see the rising sun over grassy shadowed waters, and revel in the bursting colors of the morning sky over one of my favorite fishing spots.

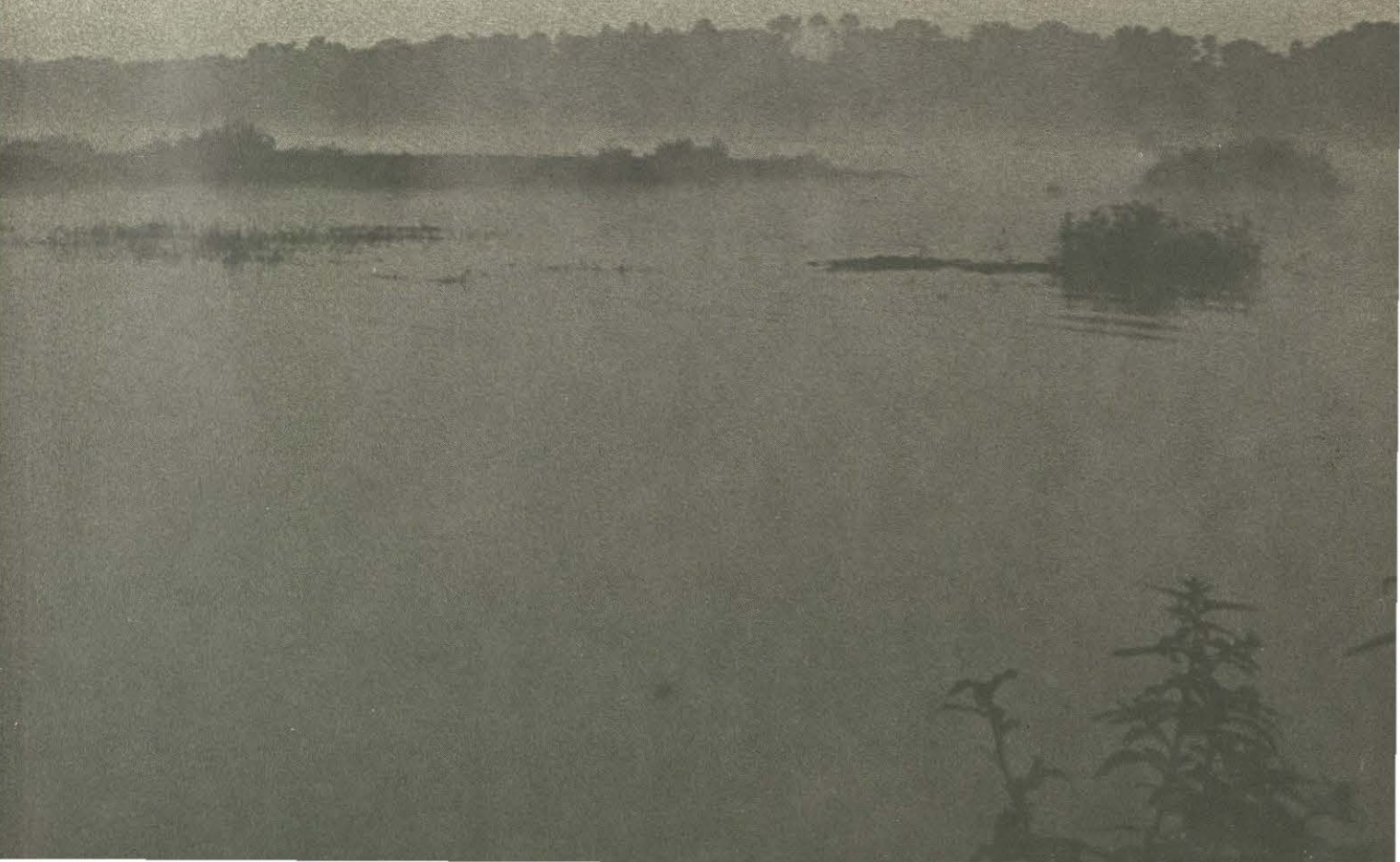
In returning to work on Monday with the memory of the weekend I just enjoyed so fresh in my mind, I try in desperation to get my brain conditioned for a new work week. As I stare down at my desk, my mind subconsciously rebels and sweeps me away from reality into another realm of time. . . my bass boat is breaking through patches of early morning fog, pushing through thick weeds which lead into an open pocket where I can throw my plug with ease.

Reaching my destination, the dew-covered grasses give way to a clear pool, ahead of which lie several pockets looking like large mirrors framed with long stocks of cattails. A few ripples along the edges alert me that the bass may be feeding. My eyes catch movement in the cluster of reeds ahead. My hand reaches downward as I keep a steady eye on the spot of my planned attack. Grasping the handle of my rod, I get a comforting feeling that my body is now complete. As I thrust my arm forward with my first cast, I feel as though I am giving the signal to this sleepy, silent world that the day has begun.

I watch my plug glide across the hazy shadows reflected in the sun-glittered water and land softly, causing faint waves that seem to circle endlessly until they fade into the depths. I twitch my plug to give it life, and it dances to the tune of the soft breeze that tells me morning is in full bloom. I begin to feel a sense of excitement as I imagine the lunker bass lying near, waiting for an early morning treat.

Suddenly the vision fades, and I am back to the reality of the desk in front of me piled high with the day's work. I know I will have to fight desperately to concentrate on my duties of the long week ahead, until I am again freed from my daily responsibilities and can return to that world where I find peace. □

text by gloria anderson ~ photography by brian proctor



Lovett Williams Jr.

VOICE of the TURKEY

With a putt, purr, kee kee or cackle, this king of gamebirds is trying to tell you something.

A day or two before entering the world, the still immature shell-bound turkey begins to make sounds. At first they are peeps that tell the brooding hen it's almost hatching time and stimulate the other poults in the clutch to speed up their hatching. That way the whole brood can leave the nest together quickly and not attract predators with the odors and sounds of hatching. If an egg is late in hatching, it will be left behind.

Peeps inside the egg shell are not ignored. The hen clucks softly back to every sound, and the poults respond. Experiments have shown that if a brooding hen is made deaf so that she cannot hear the poults, she will kill them as though they were just so many tiny varmints. Turkeys talk back to each other—it's the key to their survival.

Eons of evolution have dictated when they will and will not call. To break these timeless rules brings death in the clutches of a predator, eliminating those that don't conform to the pattern. The first two weeks of life is a time of special tribulation. Silence is the rule for young poults and as the family forages, the hen's sounds are scarcely loud enough to be heard beyond the circle of her brood lest predators be attracted. But no brood escapes danger forever.

Predators are everywhere. A brood with so many poults under attack is like a machine with as many parts working together. At first, there is the pandemonium of every bird for itself, scattering in as many directions as there are poults. Only the hen stands her ground against an intruder and only she moves or makes a sound, putting and clucking enough to occupy the attention of any predator at hand. Poults know instinctively to freeze and be quiet. The hen stays in constant motion to distract attention from the young. The poults will not peep while the hen is clucking.

If the hen leaves the scene, the poults will not call for a half hour after last hearing her voice. The hen usually remains within voice range of the poults so that they will not call. And she will call no louder

Lovett Williams Jr.

When an old gobbler (opposite page) gives the plain yelp or lost call, you can know it by its low pitch, low non-musical sounds and guttural tone. The hen (left) clucks constantly to her hatching poults. Their behavior and survival will be controlled by the mother's voice until they are grown.

By LOVETT WILLIAMS JR.

than necessary to be heard by them. The half hour of silence rule for scattered poults persists until adulthood. Not until the summer is well along and the poults are nearly grown can they survive without the hen's voice to control them. During this period many lessons are learned and their voices are used more than their wings.

Skilled turkey hunters have learned some of the turkey's language. Calling turkeys is the special dimension that sets this hunting apart from others.

BASIC CALLS

Turkeys have more than two dozen different calls and many variations on them. The turkey hunter, however, will rarely notice more than 10 different calls and is completely skilled in calling turkeys when he can master and understand the eight basic calls.

Tree Yelp. This is a slow, soft, nasal, usually three or four-syllable yelp made only at daybreak from the tree roost. It is made at the time of awakening when turkeys are just becoming visible in the trees. They will not make this sound later in the day nor after being flushed into other trees from their roost. It is an early morning greeting by turkeys to make sure they are still among friends after a dark night of not seeing or hearing each other. The hunter should strain his ears for this call on still mornings in roosting woods. Roosting turkeys will answer a tree yelp (but the hunter would have to already know about the roost or, by chance, be almost within rifle range to benefit from it).

Lost Call. The lost call is the bread and butter of the turkey hunter and it alone will do the job most of the time. It will make a gobbler gobble and will call one up. When properly and loudly executed, it will evoke an answer from turkeys one-half mile away. It is most effective in calling lost birds of a recently scattered flock. An unmolested flock will attempt to reassemble by "lost calling" in about one-half hour. If the flock has been shot at a few times, its birds may not call for an hour, sometimes not for several hours. It is the standard fall call to use in turkey woods—you never know when a lost turkey is around.

Plain Yelp. The plain, old, everyday, sporting-goods-store yelp is everybody's idea of what a turkey sounds like. It's an unexcited lost call and functions in about that way. This is also the call that some spring hunters call a "love call" and it works for that, too. This yelp is made in fall, winter, and spring by hens and gobblers, young and old. From the mouth of a gobbler, the call comes out lower pitched and less musical than from a hen. Young gobblers sound much like old gobblers and hens sound pretty much alike, regardless of age. The plain yelp is best used routinely throughout the day while hunting. Some hunters like to mix it with an occasional "cluck." Plain yelps will evoke a response from a spring gobbler (just as almost any sound will!) and call him up if he is of a mind to come. It is the standard call when "working" a spring gobbler.

Lovett Williams Jr.

Cluck. The cluck seems to have several meanings. The sound is a short single-syllable, non-musical tone. It is used to gain another turkey's attention, but not to alarm him or to call him over. It sounds like an alarm "putt," but softer with a distinctly less alarming purpose for turkeys. Its major use in turkey hunting is to evoke an answering cluck from a turkey. Many hunters use the cluck regularly and believe that it calls up turkeys, and it does, because turkeys are curious about any other turkey sound. My impression is that turkeys cluck when not too anxious to do anything except find out who the other turkey is. But that is enough to serve the hunter's purpose. Use it occasionally from a blind or frequently as you move around in turkey woods.

Kee Kee & Whines. These are the rhythmic high-pitched calls of young turkeys. Young gobblers are as apt to kee or whine as young hens. Adult hens frequently make these calls and old gobblers sometimes. The call indicates a desperate, lost turkey and one that is vulnerable to almost any imitated calling.

Putt. This is the loud, sharp, staccato alarm note. Hunters cannot use it to call turkeys, but you should know it when you hear it—it is probably the second worst sound a calling hunter can hear. (The worst sound is the blast of someone else's shotgun nearby).

Gobble. The old tom cannot help gobbling when the mating season comes, but who can say *why* he gobbles. Gobbling has two effects on other turkeys: hens hear a potential mate, other gobblers hear a

potential rival. It is a fact that gobblers will investigate other gobbling in their vicinity and may fight with uninvited gobblers. It stands to reason that imitated gobbling could be used to call gobblers in spring hunting, but not many hunters do it. It would be dangerous.

Cackle. The variations of the cackle give it many different meanings. We tend to lump together several different calls and label them all "the cackle." In this category go the loud, high-pitched short loud yelps made in rapid succession, and usually without a discernable rhythm. Likewise, the "pit-pit-pit" call of adult turkeys sound like a cackle. Some elements of the mother hen's cackle and the adult turkey sounds like a cackle. Some elements of the mother hen's cackle and the adult gobbler's pit-pit-pit are similar. Some turkey hunters can make a half-respectable cackle. Its use will sometimes excite an adult hen in a flock to cackle back, and will call other turkeys occasionally. But the main hunting use of the cackle is to know what it sounds like from far away and learn to course the sound and go to the flock. A loud cackle can be heard about as far as a gobble can, and is used for the same long distance calling by the birds, whatever it means.

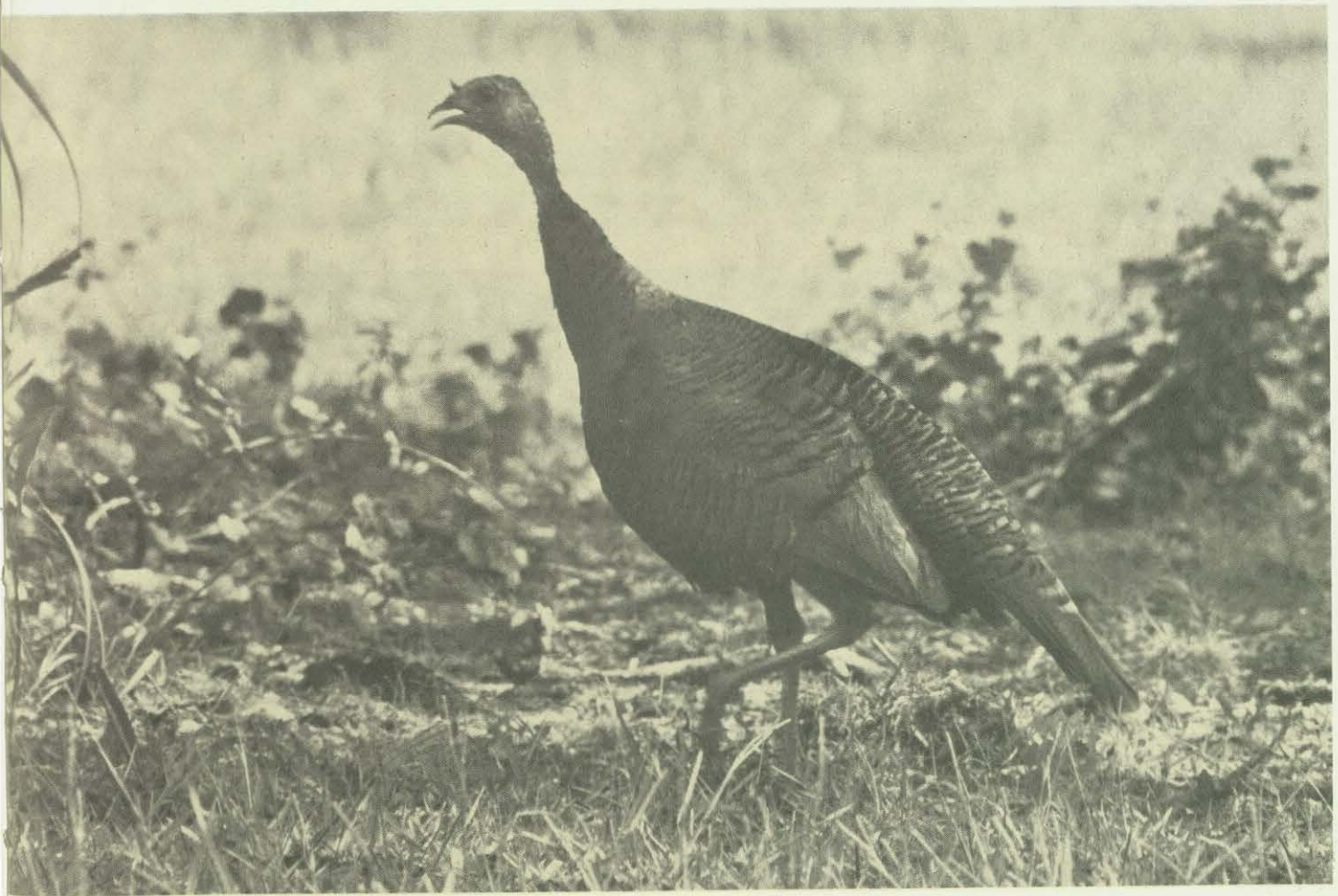
Turkey calling skills are not limited to the eight basic calls. There are about a dozen more minor calls and variations that can enliven a conversation with a turkey and make the sky the limit in calling turkeys. They carry very important meanings to the hunter, whether he can imitate them or not.

The pit-pit-pit (sometimes called a "whit-whit") call is rarely of any use to imitate, but has a useful meaning. It is given by a turkey that has heard another turkey (or you) and does not intend to come to the other turkey (or you) and is in the process of leaving the immediate vicinity. It denotes impatience and is one of the calls in the cackling complex. The turkey has said, "I know you are there; now, let me tell you that I am here and that I am leaving. You are welcome to come with me, but I am not coming with you."

The kee-kee "run" as it is sometimes called, is done differently by a young gobbler than by the young hen. A young hen giving this many syllable lost call will often drag it out and end up on three or four high, clear notes which, from a distance, sound like a whistle. The young gobbler does the same but, in addition, has a peculiar way of jumping tones upward for two or three high kees and back down to

The tree yelp is given just before flying down time (left). The lost young hen, below, is noted for kee kees and whines, but young gobblers do it, too.

Lovett Williams Jr.



wind up on one or two lower guttural yelps. Incidentally, turkeys do not really whistle after they are a few weeks old.

My favorite turkey sound is the old gobbler drumming. This is the soft hum following the "puff" during the fantailed strutt. They do it in the tree before flying down and while strutting on the ground. I do not know what the drumming means to other turkeys, but to the turkey hunter it means that you are close to an old gobbler who is interested in a hen at the moment. I have always believed that the drumming sound was made by vibrations of the spread tail and I have confirmed this recently by watching my domestic gobblers in the back yard. The "puff" sound that precedes the drum is made vocally.

Meaning is denoted by rhythm, volume, syllabic emphasis, rapidity, and other things. (This is as true of people as it is of turkeys.) The purring sounds of turkeys are a good example. At one extreme, when a flock is strolling along, unhurried and undisturbed, they whisper back and forth making a soft, medium-pitched, fluttering purring sound. You have to be almost as close as the other turkeys to hear it because they make it no louder than necessary for others in the flock to hear. When this same sound is made louder, it means the turkey is curious about something and this will sometimes attract the attention of the others in the flock. They may approach the object of interest while continuing to purr moderately loud.

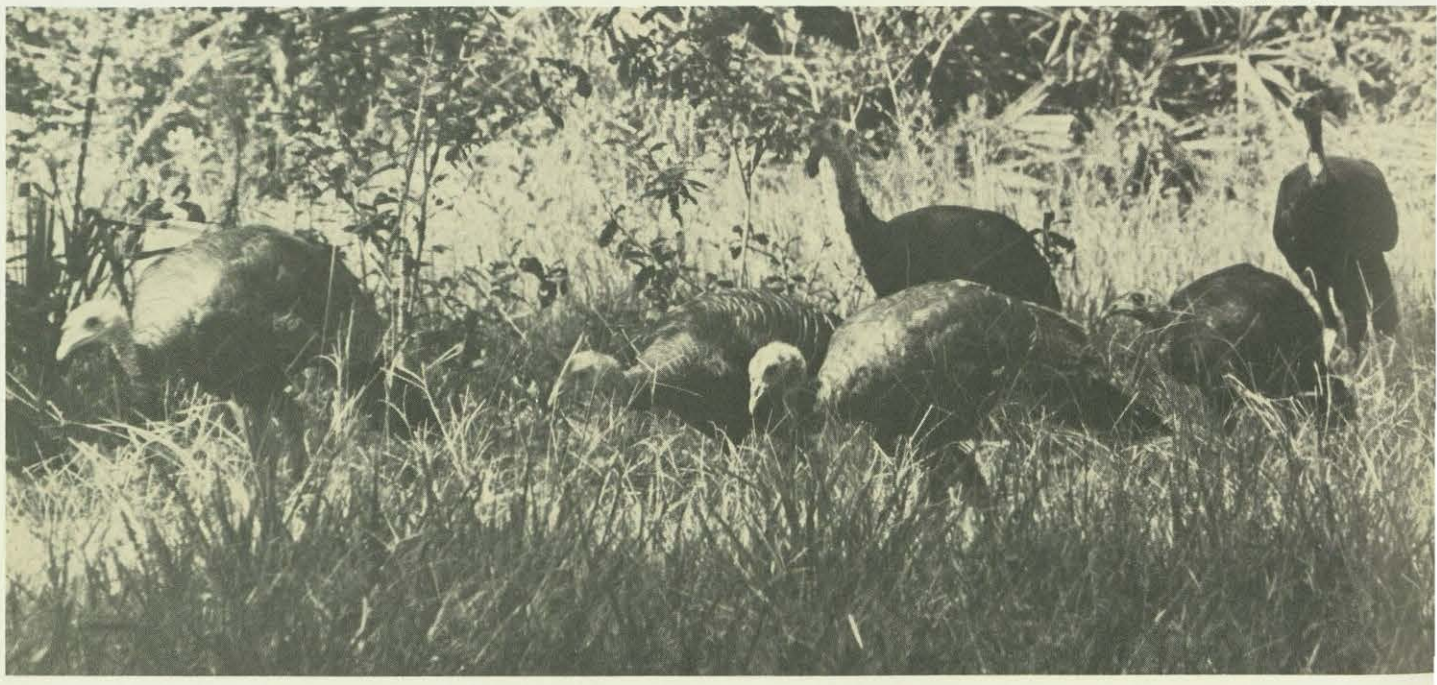
If the purring becomes louder, it means increasing alarm and suggests caution. This will put all heads up and start the more suspicious birds to "putting." As curiosity gives way to real fear, the bird that was "purring" begins to "putt."

With the mild, single syllable "putt" comes another sliding scale of meaning carried by volume and tone. The louder the "putt," the worse the situation perceived. If the situation worsens, the birds walk away "putting;" if it threatens, the turkeys "putt" as loud as they can and run or fly away in panic. But if the situation subsides short of panic, the volume and tone of the "putting" tapers back to the softer tones and finally back to the medium-loud "purring." Finally, with the whole flock occasionally "purring" back and forth with the cause of concern as forgotten as last year's nest.

But the "purring" doesn't always increase in volume and turn into "putting." Sometimes it escalates in volume while maintaining its multi-syllable sounds and winds up in a free-for-all in a flock of gobblers. The same mild alarm purring given by a gobbler that is examining a strange object close by will be given by the same turkey when he challenges another gobbler who has invaded the invisible air space around him. Let a gobbler step closely in front of another, and one had better move away, preferably by turning his back. If not, mild "purring" turns to loud "purring" and that builds into very loud and harsh "purring." If repeated by the gobbler being challenged, the notes of "purring" attain a distinctness and a staccato sound that can be heard for a mile, and fighting ensues. At that stage, it is hard to tell anything about the vocal sounds because of the thrashing of wings and the tumult of other gobblers joining in vocally. In that way, the same sound of "purring" softly used to reassure the flock on a feeding stroll, can build into a conflict of loud proportions. The shades of meaning can only be fully understood by a turkey. □

A contented flock makes few sounds except to purr back and forth. Only the turkeys know what it means.

Lovett Williams Jr.



HUNTING

By CHARLES DICKEY

The whitetail buck is a sneaky animal

Leonard Lee Rue III

A buck in good cover can slip away as quietly as a shadow. Unless the hunter is alert, he may never realize the animal was near.

One of the toughest things about deer hunting is seeing one in the first place. Any veteran hunter will tell you that more deer see you than vice versa.

I've been looking at wildlife calendars in barber shops and reading outdoor magazines since I was a small boy. The white-tailed deer is a favorite subject of artists and photographers. I must have seen 100,000 pictures of bucks and 99 percent of them had eight or more points and were posing in the open in bright sunlight so you could see every hair.

If you expect to see calendar bucks when you're hunting, you won't take much venison home. Once in a while you may see one in the open 400 yards across a pasture, but when you're in the woods, you soon learn the buck is a sneaky animal.

He is camouflaged to blend into any cover. He uses the shadows and brushy cover to drift through the woods like a ghost. You watch a small feed patch in a forest and suddenly there is a doe in the middle of it. How did she get there? You never saw her leave the woods and enter the field.

Calendar deer have tawny, light brown coats, almost orange. Real deer in the hunting season are dark brown and I've seen swamp deer that were almost black in sunlight. At dawn, dusk and during foggy or rainy weather, deer at a distance are gray or black. If your mind is concentrated on light, brown hides, you won't see any gray bucks slinking through gray shadows.

I spend more time in a blind trying to photograph deer than I do trying to shoot one. Even when a blind is baited for the camera, it is difficult to get a good picture of a buck in sunlight. They don't want to leave the brush and shadows and feed into the sun spots. Even if one does, he's usually slinking, not posing alert and erect like the artists paint them.

Most of my deer photos are of bucks in cover and

shadows. It's difficult to get editors to use them. They want pictures of buck statues flexing muscles in bright sunlight with no interfering cover. Anyway, photography is a good way to study deer. It helps my hunting.

The beginning hunter has a tough time learning to see deer in the woods and edges and I suspect that it's because he's always looking for a calendar buck. No one ever told him that a deer wet from walking through dew-covered vegetation at daylight is gray or black.

The human eye is adept at picking up movement. But deer are not always moving. If they are alerted or curious or suspicious, they stand still and wait for additional information. A beginning hunter has difficulty seeing a dozen deer standing against a wooded edge 200 yards across an open field. His eyes are not yet trained to look for subtle changes of color or shade and silhouettes. The same sight picture to an experienced deer hunter would highlight the dozen deer like neon signs.

The beginning hunter must learn to look for still silhouettes. Once he gets the hang of it, a deer's head, with two large, seven-inch ears protruding, is an obvious giveaway. Too often the new hunter first looks for antlers and then to see if there is a deer under them. It's much easier to first find the deer and then check where the antlers should be.

Antlers are difficult to distinguish at much distance. If the deer is in cover, the antlers blend in with limbs, branches and other vegetation. Assuming you have time, the best way to check antlers is with your scope or a pair of binoculars.

This season, if you're sure the deer has at least one visible antler above the hairline, you can shoot him and then count the points.

When hunting thick cover, you often have to look for parts of a deer. The black, damp nose is sometimes distinctive. The liquid, dark brown eyes can be a giveaway. If you're on your belly looking, you may see two or three slender legs that don't look just like the surrounding pole timber. There is a lot of white on the inside of the legs. In fact, if you carefully examine a dead deer, you'll be amazed at the amount of white, even on the head around the eyes, above the nostrils and the inside of the ears.

Once you positively identify a part, you can quickly make out much or all of the deer. You wonder why you didn't see the whole deer to begin with. The crux of the matter is that it's difficult to see a whole deer in cover. He's camouflaged not to be seen and he uses the cover and shadows to that purpose. Perhaps no hunter wants to know how many big bucks he's walked by within easy range without ever knowing they were around!

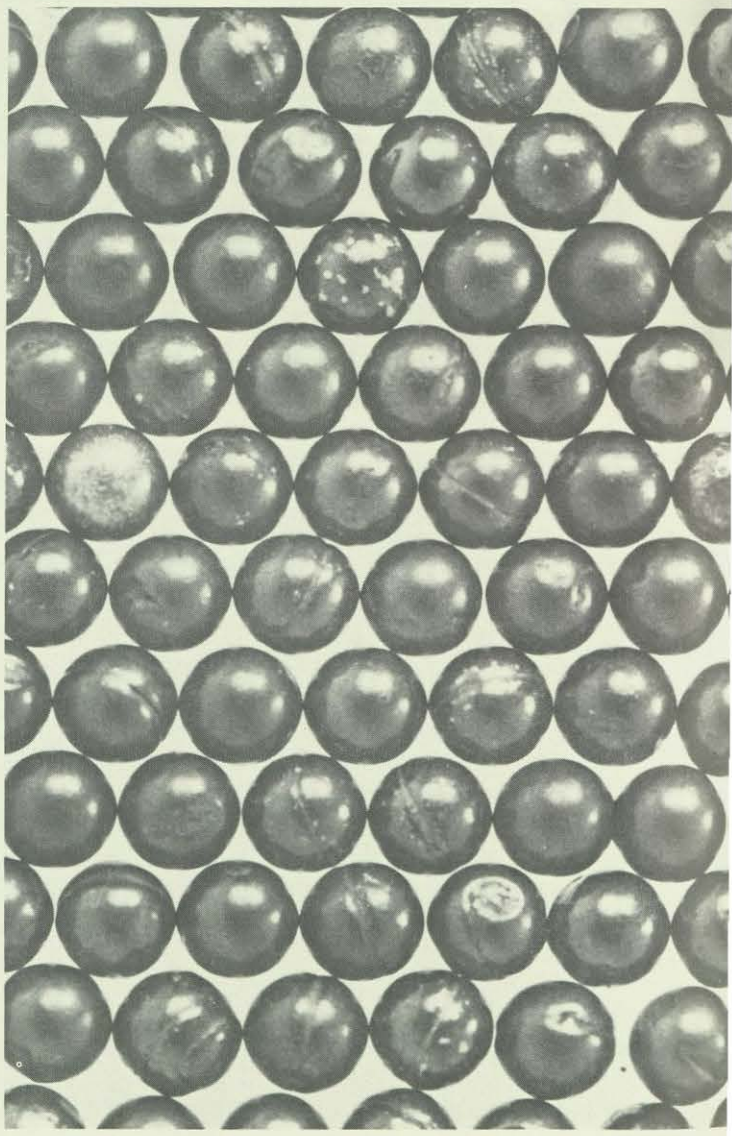
Steel Shot

If you hunt ducks in the steel-shot or non-toxic-shot zones of Florida this season, you'll have to use steel shot to comply with federal regulations. This applies regardless of what gauge shotgun you hunt with.

Although there are many brands of shotshells, there are only three major manufacturers—Winchester-Western Division of Olin, Remington Arms Company and Federal Cartridge Corporation. All three companies are loading steel shot in shotshells in 10- and 12-gauges with choice of shot sizes. Only Federal is loading 20-gauge shells with steel shot. Only No. 4 shot are being loaded.

No company is loading 16- and 28-gauges or .410-bore shells with steel shot. Because the 16-gauge has decreased in popularity, it is unlikely that steel loads will be made in the future. There are many technical problems with suitable ballistics for steel shot in 28-gauge and .410-bore loads and these will probably never come on the market.

All three companies make various loads with copper-plated shot. These have not been approved for use in steel or non-toxic zones, and indications are that they will not be in the future. Experiments by the U. S. Fish and Wildlife Service have shown that



Morrie Naggiar

Genetic considerations are important in managing a herd for trophy buck production. Culling out the spikes is a step in the right direction.

when waterfowl eat copper-plated shot, and it lodges in the gizzard, the copper is quickly worn away and the bird is subjected to lead poisoning from the interior core of lead.

This will be the first year that 20-gauge shells with steel shot have been on the market. They may be hard to find in sporting goods stores. The dedicated duck hunter who hunts in non-toxic zones, might be better off to switch to a 12-gauge shotgun. He'll find a better availability of shells and a choice of shot sizes.

Spike Bucks

The hunter who kills spike bucks may be doing the herd a favor and also other hunters.

Studies by the Texas Parks and Wildlife Department show that long yearlings (18 months old) with spikes are inferior and do not develop good antlers even with improved nutrition. In controlled breeding experiments in fenced areas, about half of the bucks fathered by spiked bucks were only spiked bucks at 18 months of age. The experiments suggest a genetic factor of bucks with poor antler development passing it on to their progeny. This has not been proven yet but Texas biologists are continuing their studies.

A lot of hunters pass up a shot at a spike with the idea that if they let him go he will develop a much better rack in a year or two. The Texas studies are pretty conclusive that if the spike is 18 months or older any future rack will be inferior, although it may have more points.

On the other hand, the Texas studies showed that a forked horn buck of 18 months was likely to develop a good rack, especially if there is plenty of a balanced diet. So, if the hunter is going to pass up a shot, it should be the forked buck and not the spike.

While many hunters are reluctant to kill spikes, if they see a large number of them on the area they hunt, it's a good indication that they should be harvested. The spikes, which will never develop superior racks, consume a lot of food that could better be used by bucks with a superior potential. □

By STEVE SMITH

FISH MAGNETS

Stan Kirkland

The old adage "Finding the fish is only half the battle" is indeed true. Countless books and articles have been written, tackle and lures developed and scientific studies undertaken to assist the fisherman in catching fish once he has found them. Help in finding them, on the other hand, has not been as readily available. The best techniques, the best equipment and the best bait can't catch fish that are not there.

Most fishermen realize that fish are not evenly distributed throughout a body of water. If they were you could drop a line just about anywhere and catch fish. Fish tend to congregate in certain areas of lakes and streams. Experiments aimed at concentrating them in an area so that they may be easily located and caught began in Michigan in the mid-1930s. By placing brush and gravel mounds in lakes, fish were concentrated in particular locations, thus the fish attractor was born.

In Florida, fish attractors were first used in the 1950s. Everything from cement blocks to soybean cakes have been used at one time or another. In 1969 the Commission initiated a scientific study to evaluate the use of fish attractors and to determine the best types for Florida waters. The results of this study were so positive that in 1977 the Commission began a five-year program to install a total of 150 attractors in lakes throughout the state. To date more than 90 attractors have been installed in 34 lakes.

The theory behind a fish attractor is simple. By providing something a fish needs it can be drawn to a specific area. Fish attractors provide cover, spawning sites and food. Initially small fish seek food and shelter in the attractor. Predator species such as the largemouth bass follow looking for a meal. Larger sunfish such as bluegill and shellcrackers are drawn to the attractor in search of small organisms growing in and on the attractor. Essentially a fish attractor acts as a magnet drawing fish to it and providing the fisherman a known location in which to try his skill in catching the fish which are most certainly there.

Ron Jones

The effectiveness of fish attractors was dramatically demonstrated recently when an attractor was installed in Merritt's Mill Pond in Jackson County. The crystal-clear water afforded an unusual opportunity to observe the results. Even before the attractor was finished, fish were seen swimming in the brush. Within days the attractor was literally covered with fish. The accompanying photographs were taken only a few days after the completion of the attractor. Fish of all sizes from minnows to large bass were observed. Those that haven't already been caught are still there waiting for a fisherman to present the right bait in the right way. □

Concentrating fish so they are readily accessible to the angler is the purpose of the Commission's attractors. Response is fast, like a magnet pulls in iron filings.

Ron Jones

William Greer

Current Status & Future Trend of Florida's FISHERIES RESOURCES

Florida is a magic word to many citizens of this country who believe this state to be a vacation land offering a variety of high quality recreational opportunities including superb trophy largemouth bass fishing. Residents and tourists alike place high value on their water-

oriented recreation. Man's desire to enjoy and participate in such activities is clearly indicated by high levels of usage and the large numbers of boats, outboard motors, and related gear purchased annually. In addition, a premium is placed on waterfront property for residential and commercial development. Water is of extreme importance to the future of Florida as a measure of the quality of life for people and as a medium for fish and other aquatic life.

The freshwater resources of Florida represent the richest, most classic example of excellent warmwater fisheries in the world, composed of outstanding game fishes and food fishes such as largemouth bass, sunshine bass, black crappie (speckled perch), chain pickerel, bluegill, shellcracker, warmouth, channel catfish, white catfish, several bullhead catfishes and other sunfishes. These fisheries are rich not only in species and abundance, but in monetary value as well, with almost one billion dollars generated annually by freshwater fishermen. Florida's natural freshwater systems, represented by three million acres of lakes and 10,000 miles of streams afford two million people, including a half million tourists, with more than 65 million recreational days of freshwater fishing annually.

The pressures of human population growth and attendant land development have generated consideration alteration of many natural lake environments, and the rate of change is continually accelerating. Causes of these changes include the discharge of domestic, industrial and agricultural wastes to the surface waters of the state; the use of chemicals for pest control; encroachment of urban growth into floodplains with subsequent elimination of natural surface water fluctation cycles; channelization of natural water courses; alteration of watershed hydrological patterns and decimation of natural aquatic plant and animal communities.

Indicators of the degraded aquatic environment include shifts from stable, natural-rooted aquatic vegetation to unstable, odoriferous algal "blooms," or noxious growths of rooted plants to the extent that beneficial uses are eliminated. Such conditions are accompanied by depletion of life-giving oxygen, destruction of food chains, and the gradual evolution of waterways from productive aesthetic assets into unattractive, unused biological deserts. Principal among these man-caused impacts are nutrient pollution and watershed drainage.

Organic Pollution of Lakes and Streams

The single, most damaging and widespread influence on Florida lakes is nutrient pollution from domestic sewage, urban storm drainage, and agricultural runoff. The principal ions involved are potassium, carbon, nitrate and phosphate, of which the last three are most important as they control the amount of plant growth in the aquatic system. The increased discharge of these ions has profound effects on plant growth in surface waters, causing massive accumulation of noxious algae. This effect is of greatest consequence in lakes.

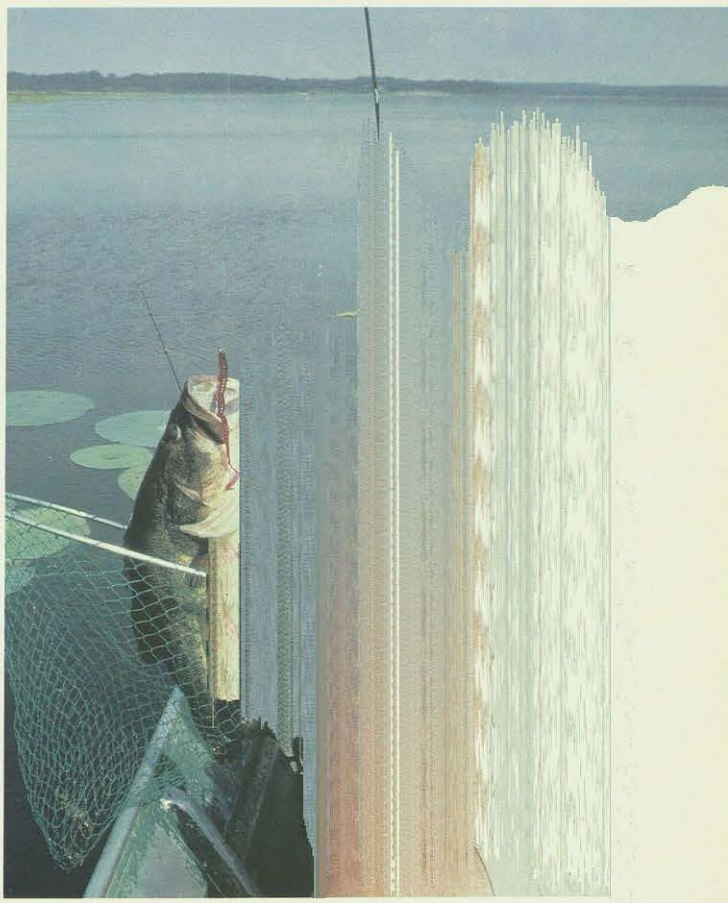
Nutrients entering lakes tend to accumulate, causing the system to become eutrophic (characterized by rich production of plants and animals). The process is accelerated by the addition of extra nutrients (sewage and runoff), and there is evidence that this is happening to the majority of lakes in peninsular Florida.

The results of increased eutrophy are generally undesirable. In Florida, important game fishes are replaced by a succession of coarse fishes. This means largemouth bass, speckled perch and channel catfish are succeeded by shad and stunted bream, and these in turn by gar and stunted bullhead catfish. The production of planktonic algae increases, as may the growth of water weeds. The water becomes turbid because of the massive growths of algae and loses its sparkle and clarity. Certain species of blue-green algae which flourish under these conditions are directly toxic to fishes, wildlife and domestic stock. Cattle, sheep, pigs and many kinds of poultry, including ducks, have been known to die soon after drinking water that contained heavy blue-green algal growths, and there are many reports of fish kills (some of them massive) caused by the decay of algal blooms. These kills are often caused entirely by oxygen depletion, but may occur in combination with the release of toxic substances by blue-green algae which are characteristic of eutrophic waters.

These losses can happen rapidly, but more often occur at a very slow rate. Affected urban communities gradually become accustomed to seeing seasonally occurring algal blooms, dead fish scattered on the shore, deserted beaches, loss of water recreational opportunities and associated business enterprises, and show increasing reluc-

Florida's reputation as a freshwater fishing mecca is based on fact, but a shadow hangs over many of our once far-famed waters.

Charles Dickey



tance to finance better sewage treatment facilities. The aquatic resources gradually become "biological deserts" and resource users and businesses go elsewhere. This, in turn, has the effect of placing increased demands on remaining resources and makes their preservation and management more difficult. Unfortunately, in many cases, the change seems to be irreversible. Once a lake has become eutrophic it often remains so, even if the source of extra nutrients is cut off.

Channelization and Drainage

The physical destruction of Florida's streams and rivers has been accomplished largely through channelization for drainage and flood control. In recent years several major rivers have been straightened and dredged with little regard for biological consequences. The riverbed is attacked with bulldozers and draglines, the entire environment is altered and most of the animals and plants are removed. Usually the river is so damaged that it can never return to its original state. In place of a productive series of riffles and pools, the stream bed is channeled into a uniform ditch, decreasing the variety of microhabitats and leading to a general biological crash.

These alterations eliminate the special conditions needed for spawning of game fishes, and production of waterfowl, marsh birds and animals. The pollution-abating capacity of an adjacent marsh is destroyed, permitting the rapid transport and accumulation of nutrients in downstream lakes and estuaries. Paradoxically, it is this valuable marsh area, providing the basic productivity to support desirable fisheries and wildlife, that is generally regarded as a useless, mosquito-infested, snake-ridden wasteland, usable only for dredging and filling to accommodate urban development.

THREATENED ECOSYSTEMS AND PROGNOSIS FOR THE FUTURE

Lake Okeechobee Basin

The rate of eutrophication of Lake Okeechobee has been greatly accelerated by flood control ditching, land reclamation and subsequent development centered around the lake. Severe nutrient loading to the lake occurs routinely from many of its tributaries. Although the Taylor Creek-Nubbin Slough watershed supplies only 7 percent of the lake's water budget, it has been responsible in recent years for as much as 38.7 percent of the annual phosphorus load. A similar problem exists along the southern shore of Lake Okeechobee where nutrient-rich, oxygen-poor, organic-laden water is back-pumped to the lake from canals which drain fertilizer-rich agricultural land. Two of these canals, which supplied 5.9 percent of the water budget during a recent annual cycle, contributed 22.3 percent of the nitrogen load. This practice has also caused heavy organic loading and has been responsible for numerous local fish kills in recent years.

For the purpose of drainage and flood control, the 2.7-million-acre Lake Okeechobee watershed has been laced with a network of canals, dikes and pumping stations. Of Lake Okeechobee's major tributary basins, none remain in the natural state. Agricultural and municipal wastes of central Florida are now ditched directly into the lake by way of its channelized tributaries. The Kissimmee River, once a meandering 100-mile-long river with oxbows and extensive marshes, is now a 50-mile steep-banked, straight-cut canal connecting lakes Kissimmee and Okeechobee. The Division of State Planning *Final Report on the Special Project to Prevent the Eutrophication of Lake Okeechobee* stated, "In 1958, there were 412,100 acres of wetlands in the entire (Kissimmee) basin, and by 1972, acreage had been reduced to 272,500 acres. . . . The single act of canalization of the Kissimmee River reduced potential floodplain storage acreage from around 50,000 to roughly 10,000 acres."

The Kissimmee River supplies Lake Okeechobee with the largest volume of nutrients, although other tributaries carry higher concentrations. Frequently the Taylor Creek-Nubbin Slough basin has contributed more phosphorus and the Everglades Agricultural Area more nitrogen. Prior to channelization, during periods of high water runoff, the rate of flow of water through the marsh was slow. The river now quickly carries these peak flows directly to Lake Okeechobee so that the highest nutrient loads are received at the times of highest rainfall.

The potential for water quality deterioration has been well

Vince Williams

David Cox

Sewage treatment plant, lower left, discharges nutrient-laden water. Municipal sewage and urban runoff recently triggered massive fish kills on St. Johns. At left, decaying vegetation and algae along shore—signs of ailing waters.

demonstrated. Should urban or agricultural development on the Kissimmee River (which supplies 40 percent of the water budget to the lake) increase, on the scale that it has in the Taylor Creek-Nubbin Slough drainage, the effects on Lake Okeechobee would be devastating. There are already indications that this development is presently occurring.

Flood control and water management practices in the basin have had a tendency to stabilize water levels of the region. Eliminating the historical high and low water levels that occurred in the absence of man has had a deleterious effect on lakes throughout Florida. The Commission drawdown program is an example of man having to accomplish what nature was accomplishing prior to his arrival in the watershed. Lake Okeechobee is increasingly affected by stabilized water levels with little possibility of a drawdown to temporarily relieve the ills of this stabilization.

During the past five years there has been a noticeable increase in algal blooms on Lake Okeechobee. Just as excess nutrients are immediately available to algae populations, so are the algae available to fish such as gizzard shad which feed low on the food chain. The recently documented increase of gizzard shad in Lake Okeechobee would not have been possible in the absence of these increased nutrients.

All efforts designed to fight these symptoms of a seething, underlying problem in Lake Okeechobee have been counterproductive. In the process of solving one problem, several others are caused. In the meantime, the real threat to quality fisheries habitat and palatable drinking water is left unchecked. If not adequately addressed today, environmental degradation will continue to favor plant and animal life which thrive in heavily degraded ecosystems. This trend has started in Lake Okeechobee and the Commission continues to document its rapid progression. Without effective remedial action, the sport and commercial fisheries of Lake Okeechobee as we know them today may soon be history.

St. Johns River Basin

The problems of the St. Johns River arise from three basic origins. The first is the result of uncontrolled development of large agricultural tracts in the river's headwater marshes. Diking and canalizing to "reclaim" more than three fourths of these marshes (206,726 acres) have eliminated productive fish and wildlife habitat, where fishery values alone can range as high as one thousand dollars per acre. The destruction of this marsh has also eliminated water storage capacity, resulting in a loss averaging more than 200 million gallons of fresh water per day diverted to the ocean. Water quality in the remaining marsh and river habitat is adversely affected by high nutrient runoff from agricultural operations. Salts are increasing in the river water from the use of many mineral-laden artesian wells needed to replace water lost due to diversion.

The second cause is a dramatic increase in pollutants due to the pressure of people themselves. This occurs principally in the form of municipal sewage and urban runoff, triggering fish kills such as the ones recently experienced in which some 16 million fish died.

The St. Johns River is becoming increasingly eutrophic. Last year was a high water period, due to Hurricane David passing directly over the upper basin in September of 1979. The resultant rainfall filled the valley to the highest level experienced during the past five years. However, near-drought conditions began to prevail during the spring and early summer of 1980 and the "feast or famine" nature of the disturbed hydroperiod reappeared. Seasonal variations of mineral content ranged from a low in October to a high in June. Nutrients showed an overall slight decrease for the year in the mainstream stations due to the diluting effects of the hurricane. But phosphates and nitrate nitrogen appeared generally higher during the spring of 1980. Loads of decomposing vegetable and animal matter carried by the storm runoff undoubtedly caused much of this increase. The storm runoff also resulted in low dissolved oxygen levels resulting in another fish kill in the headwaters.

Storm runoff caused those tributaries which drained swamp or pasture to have generally degraded water quality with low dissolved oxygen and high organic and ammonia nitrogen levels. Conversely, because of dilution of nutrients by rain water, the Econlockhatchee River temporarily showed less damaging effects on the St. Johns during the hurricane season. But after the storm had passed, nitrate nitrogen levels rose dramatically and were probably a major contributing factor in producing a massive algal bloom which caused a large fish kill in June (10 million fish). The river north of Lake Harney can ill afford additional nutrients from sewage treatment plant discharges such as the nitrogen and phosphate load of the Econlockhatchee River.

The third cause of problems in the St. Johns River is the discharge of industrial wastes which have resulted in the addition of both undesirable nutrients and toxic materials. The bottom of the river in the Jacksonville area, for instance, has such high concentrations of heavy metals and other contaminants that the U.S. Army Corps of Engineers petitioned for a variance of state water quality standards for copper, mercury, PCBs, silver and oil and grease before disturbing the bottoms as a part of maintenance

dredging activities. In fact, of 1,500 permitted industrial and municipal discharges in the state, one third are located along the Jacksonville reach of the St. Johns. This industrial pollution, combined with a serious urban runoff problem, has kept vital dissolved oxygen levels in this reach chronically below state standards. Despite attempts to clean up the discharge of toxic wastes, growth, reproduction and the general health of fish and aquatic habitat remain adversely affected by the high levels of pollution in industrialized portions of the river.

The overall result of these three problems has been a steady decline in the top-quality fishing once touted in every sports magazine in the nation.

Upper Kissimmee River Basin

The upper Kissimmee River basin, recognized as one of the finest bass fisheries in the world, has experienced two major problems: water level lowering and stabilization, and the recently publicized, severe water pollution of its headwaters. As a direct result of lowering water levels for flood control, more than 40,000 acres of productive lake bottom on lakes Cypress, Hatchineha and Kissimmee have been eliminated. Data recorded by Commission biologists have shown this habitat to be worth $53 million in potential fish production alone. Upland marsh areas have been drained, causing an additional loss of valuable wetlands. Lake Tohopekaliga, the headwaters lake, receives more than 22 million gallons of nutrient-rich sewage per day. Nutrients contained in runoff from developing industrial, urban and residential areas are placing severe stress on the lake, as well as contributing to the degradation of downstream water quality.

This agency has been working on Lake Tohopekaliga since 1969 and first conducted an experimental drawdown on the lake in 1971. A second drawdown was necessary in 1979 because of a loss of aquatic habitat and build-up of organic muck on the lake bottom from excessive nutrient discharge. If this is allowed to continue, the drawdown technique will no longer be effective in periodically rejuvenating aquatic habitat. As a result, within 10 years, the lake's fisheries, which had a replacement value of $16 million in 1972, will no longer be capable of supporting quality sportfishing. Lake Tohopekaliga may well become another Lake Apopka.

Oklawaha Basin

The eight principal lakes of the Oklawaha chain comprise about 72,000 surface acres. Of this, nearly 54,000 acres in six lakes, or 75 percent of the total area, are suffering from gross organic pollution. Conditions observed here are representative of lake problems commonly found throughout central Florida.

Two principal factors have contributed significantly to this polluted condition: discharge to the lakes of organic wastes from sewage plants and organic muck farms, and alteration for flood control of natural water flow rates under which the aquatic plant and animal communities developed over geologic time.

The result has been a cumulative degradation of the aquatic resources producing the following:

1. Periodic or continuous algal "blooms" which discolor the water and beaches, cause unpleasant odors and create chronic widespread fish kills.
2. The accumulation of massive amounts of flocculent, toxic sediments on once-clean lake bottoms.
3. Elimination of several species of fish, including redbreast sunfish, chain pickerel and lake chubsuckers.
4. A steady decline in the population levels of sportfishes and the increased production of species more tolerant of degraded systems,

Because of the strong pollution control program in Lake County, local municipalities, farmers and citrus processors have either spent or committed to spend in excess of $30 million to remove or reduce the volumes of waste entering the lakes in the chain. However, the amount spent to rehabilitate these degraded lakes has been virtually nil.

The largest lake, 31,000-acre Apopka, was renowned for fabulous fishing until the late 1940s. Thereafter, fishing steadily disappeared, and local groups demanded that the situation be corrected. In 1967, an organized effort was made to restore the lake's productivity, and continued periodically for a decade. Recently the price tag for a proposed restoration method approached $30 million, and plans for restoration efforts have stopped.

Intensive fishery research studies on lakes of the Oklawaha chain in the mid-1970s determined that major lakes such as Apopka, Dora and Griffin now have only remnant communities of important aquatic vegetation which amount to less than 2 percent of the total area. To demonstrate the extent of this change, Lake Apopka supported approximately 20,000 acres of rooted vegetation in the mid-1940s. In 1977 there were less than 10 acres available as a life support system for game fish production. These small zones are all that are left of the game fish spawning and nursery areas in these lakes and support most of the harvestable-size game fish. The other 98 percent of the total lake areas represented by open water can support only very low numbers of game fish and represent "biological deserts" in terms of capacity to produce and support significant game fish resources.

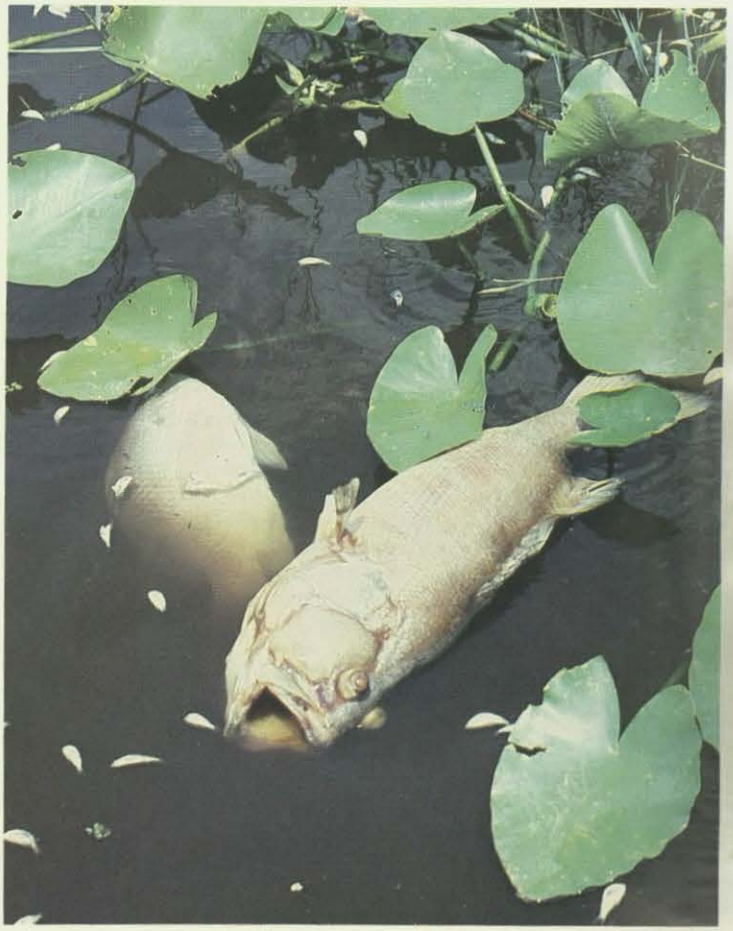
Major Rivers of North Florida

North Florida streams such as the Suwannee and Apalachicola rivers have escaped much of the ravages inflicted on peninsular Florida waterways but continue to face the problems of increased industrial and agricultural development.

More than 140,000 acres of the Suwannee River watershed will be mined for phosphate. Maintaining the high quality waters of the Suwannee with a massive industrial operation in the watershed will be a major challenge. Our past experiences with the Peace and Alafia rivers do not contribute to a sense of optimism on the subject.

The state has recognized this challenge, declaring the Suwannee an "Outstanding Florida Water" and providing that no discharges contributing to "significant degradation" will occur. Defining significant degradation will be difficult; enforcing it will be more difficult. Even without point discharges, the massive alteration of

David Cox



the landscape from mining may contribute to non-point sources of pollution.

The Apalachicola River is another river that has been a focal point for north Florida conservationists for years. The presence of Apalachicola Bay in this system, which produces 90 percent of Florida's oysters, further emphasizes the importance of this river.

The primary object of concern has been a major navigation project which many biologists feel is incompatible with the naturally shallow river. Over the years, the U.S. Army Corps of Engineers has proposed a number of projects to increase navigation, including dams that would have condemned a major portion of the remaining free-flowing river. These proposals met with stiff resistance by state agencies and conservation organizations and were subsequently withdrawn. The existing project, however, continues to have detrimental effects on fish and wildlife as a result of annual massive spoiling activities and alteration of river bottom habitat.

In addition, rapidly expanding agricultural operations along the lower river have resulted in major floodplain habitat losses as well as providing a constant potential for water quality degradation due to drainage activities and the heavy use of insecticides and herbicides. Clearcutting and drainage ditches in the upper reaches of Apalachicola Bay have routed acidic swamp waters directly to the bay with destructive impacts to the biological communities of a portion of that bay.

The Apalachicola River is a large and resilient system and, at present, remains a valuable resource. The continual pressure for greater navigation capability, industrial expansion and agricultural development could rapidly erode the values of Florida's largest river.

No discussion of north Florida streams should omit reference to the Fenholloway River. This river is the only Class V (intended for industrial use) water body in the state and accordingly has the lowest water quality standards. The water quality has improved in recent years as a result of major actions by regulatory agencies and the primary polluter, a large paper mill. Even today, however, the stream fails to meet seven of 22 different standards including chlorides, dissolved oxygen, phenols, iron, and oil and grease. Unfortunately, the impacts of this degradation extend beyond the river and impact otherwise pristine grass beds in the estuary around the mouth of the river.

Many of north Florida's other streams have received less attention but, nevertheless, are being gradually degraded through land use changes, siltation and exotic species introduction. Where habitat conditions and water quality decline, fish and wildlife resources also decline.

TRADE-OFFS, ALTERNATIVES AND RECOMMENDATIONS

Florida's population growth over the past quarter century has been spectacular and will predictably increase in the future. The projection for the next decade is an additional three million people. This amounts to an estimated 142 percent population increase between 1960 and 1990.

Ironically, the environmental movement that began in the 1960s and was enthusiastically applied in the 1970s, has begun to flounder. If we continue with the present course of occasional protection, quasi-meaningful regulations and lip service rather than enforcement, we may expect our aquatic resources to universally follow the Lake Apopka tragedy. People can learn to fish for carp and bullheads (the Ohio River stands as mute testimony to this fact); they can restrict swimming privileges to commercial or municipal swimming pools; they can give up their waterfowling heritage;

The payoff for abuse to Florida's waters is not pleasant (left). Although warning signs were recognized long ago, many once world-renowned lakes and streams are still on the downward skids. Another sign of pollution's evil hand (below), an abandoned fish camp on Lake Apopka.

Smokey Holcomb

they can cease to enjoy boating (it's not much fun in weed-filled waters or areas coated with noxious algae); and they can most certainly continue to develop the waterfront, but by this time it is more a liability than an asset.

The alternative is to act. If we are to maintain quality freshwater resources in the future, we must first have the support of the people, elected officials and those agencies responsible for regulating and protecting the waters and associated marshes of this state. Specific areas of concern are:

1. Water level regulation schedules for bodies of waters that are being controlled.
2. Channelization or alteration of streams.
3. Waste load allocation factors for surface water discharge and the methods by which these factors are developed and implemented.
4. Aquatic weed control.
5. Pesticide usage.
6. Water quality standards as they relate to aquatic life.
7. Land use policies in watersheds of lakes and streams that have significant fish and wildlife value.

Solutions, as the problems themselves, are complex and multifaceted. Certainly more vigorous enforcement and interpretation of existing laws are critical. The granting of exemptions and waivers to environmental standards must be kept to an absolute minimum and should be confined to cases where it can be proven necessary to the public interest.

A major step that must be taken to arrest the decline of aquatic resources is to formally require that all actions be carefully analyzed for their impact on biological resources in the waters and wetlands of Florida. The conservation of these resources must be considered on an equal basis with other objectives of an aquatic or marine resource-related project. There will undoubtedly be instances where economic or social needs may outweigh fish and wildlife concerns. Decisions must be made only after an objective evaluation of all effects and after all trade-offs are fully understood both by government and the public.

This type of requirement currently exists at the federal level of government. The U.S. Fish and Wildlife Coordination Act requires that any federally funded or permitted water resources project consider fish and wildlife conservation equally with other goals, such as flood control, of that project. In addition, the sponsor or permitting agency must coordinate with the U.S. Fish and Wildlife Service and that state wildlife agency. Major public works projects and federal dredge and fill permitting are examples of development activities subject to this type of review.

At the state level, however, there is no formal requirement to consider values of fish, wildlife and their habitat in the majority of permitting processes or state-sponsored construction. Changing this situation should be one of the first priorities in reversing the present course.

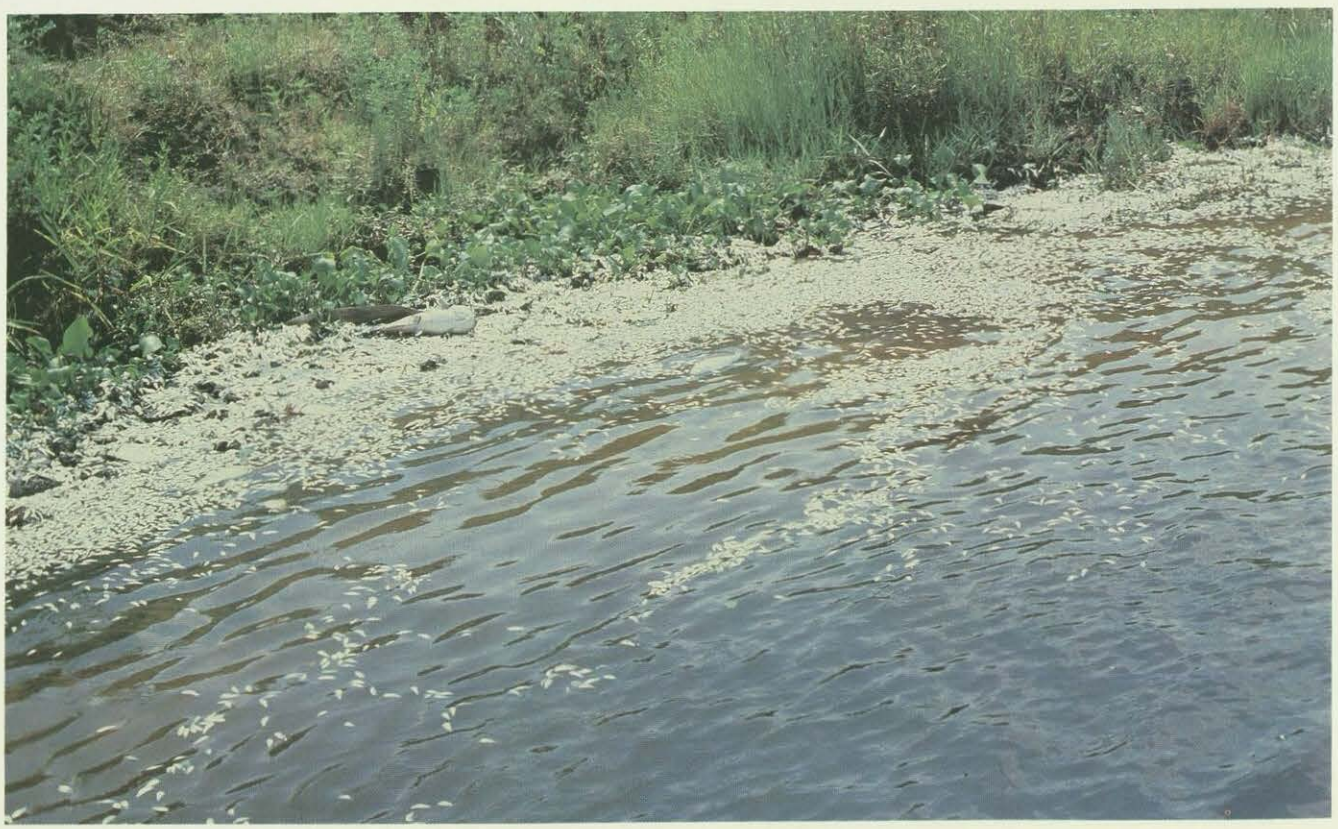
Creation of a Florida Fish and Wildlife Coordination Act would go far toward protecting fish and wildlife habitat. With such a law, fish and wildlife habitat would be a formal consideration in various types of permitting and construction programs. The Commission would act in an advisory capacity with no veto power but would provide fish and wildlife input for consideration and response by the permitting agency. Never again would we hear the frustrating refrain, "We know this action will destroy wildlife habitat but, under the law, we can't consider habitat."

On a larger scale, we eventually will have to face the reality of population growth and economic impact on fish and wildlife. Wise management of future growth and the careful control of economic development are important to our way of life. If these objectives are accomplished, fish and wildlife losses can be minimized. Careful planning coupled with grassroots support by the people will provide the catalyst for political decision and guidance. Corrective technology is available, and sometimes expensive, but compared to the value of our natural resources, it is a wise investment.

Florida still has reason to lay claim to its magic name, but if we are to keep the resources which earned this reputation, we must act now and not compromise their values. □

Threadfin shad, an important forage species for bass and other game fish, are wind-rowed along shore—the result of a massive pollution caused fish kill in June 1980.

David Cox



WHY HUNT?

Charles Dickey

by biff lampton

Dusk is a gray time in the heart of an oak hammock. The tree trunks are gray, the Spanish moss gray and the air takes a grayish tint as the scarlet sunset penetrates gray-green leaves.

I stood in that grayness and listened to sounds of fury, hate and danger. They came from a thicket just yards away and though I could not see the animal who made them, I know what it was.

I stood there with my bow, a modern and deadly weapon rendered useless by the bulk and nearness of the creature.

I stood there shedding the scales of pretended sophistication and knowing the vulnerability of man in a more natural world.

"Why do you hunt?" a friend who believes the sport cruel and barbaric once asked.

"Hunting needs no justification," a wildlife biologist once told me "but could use some understanding."

In the opinion of the former, man has outgrown the basic need to hunt. He has become civilized and social and the ethics of his civilization demand he follow a human creed. To modern man, all lesser animals subscribe to lesser law.

The biologist has been taught that hunting is a viable tool in the management of a renewable resource and argues that without sport hunting the world would be less wealthy in wildlife. He cites the history of contributions of wildlife and cannot understand how other men new to his area of interest rule him so inhumane.

Between the two philosophies a great battle rages. On the one hand are anti-hunters sincere in belief and purpose. Many are seeking to impose their views on hunters by all available methods up to and including legislation.

The biologist and his sportsmen allies are in a position of defense and their arguments tend to jus-

tify sport hunting without explaining the human desire to participate.

I can speak only for myself. And in my own mind I have answered the question to my own, very personal satisfaction.

"Why do you hunt?" my friend asked. The night was cool, the companionship good and the thoughts flowing freely. "You seem an otherwise sensitive human," he grinned, taking the sting from his unspoken condemnation.

This is what I told him that night as the fireplace glowed.

I believe each human is born with a basic hunting instinct, one that evolved through generations of men who hunted for livelihood and sport. This instinct has become camouflaged as man has progressed but is still evident in today's society.

Many "hunt" through the thrill of a detective drama on television. Little children enjoy the "hunt" of the game of hide and seek. To a substantial minority of Americans, the instinct is recognized through the experience of sport hunting.

Where there is hunting there must be killing. Death is as much a part of nature as life. For there to be life, there must be death.

Because man can wonder and dream and within his mind project thoughts, he can conceive an unknown. And because the unknown holds doubt, he can come to fear it. Death is an unknown.

In the wilderness animals do not elaborate death as do humans. They do not build monuments to the dead or hold ceremonies over the body. Only man does this and it is because of his fear of death, his fear of the unknown.

As humans we personalize animals in terms we can easily understand. Television cartoons depict rabbits and wolves with human characteristics. Documentaries stage wildlife and the narration explains the action within the framework of human imagination. The impact is that we have come to think of animals as somehow human.

To many men, the concept of killing an animal is worse than killing a human because the animal is without human defenses. Many believe animals live in constant fear of death because we live in constant fear, or at least constant knowledge, of that end.

They do not.

As an observer of wildlife, I have many times watched animals as they were approached by hunters or other natural predators. They do not flee in blind panic. Most, if not completely startled by the approach, simply move away from the threat the predator represents and resume their normal activities when the threat is over. Even if the prey animals are forced to run with the predators at their heel, they do not seem to dwell on the experience when they escape. Within minutes the incident is forgotten.

Animals of the fields and forests cannot afford the luxury of fear or memory.

Experience is the teacher of the outdoors. Experience is what makes the animal "wild." I do not like the word "wild." I prefer the word "wary." Most creatures can become accustomed to man and with this familiarity are no longer wary when he approaches.

Without wariness in our wildlife we lose a great value. Who can place a price on the glimpse of a buck in the early morning's light? If that same deer is tame, he is like a prize bull, beautiful but not with the same lonesome beauty. Our society places value on things that are not commonplace. The rare sight of a wary buck is certainly not commonplace.

Why do I hunt? I hunt for food. Not in the sense that I must do my own killing to eat, but as a symbolic gesture . . .

Today our meat seems somewhat created in the supermarket. It comes wrapped in plastic, neat and without character. We eat the steak or hamburger and enjoy its taste but give little or no thought to the death that was necessary in order for it to be.

Someone else, someone who we rarely see because his job is distasteful to many, kills the steer and renders its body of gore, intestine and blood. Someone else hacks and saws the meat into tidy portions. Someone else wraps it, processes it, adds to it the chemicals that prevent its rapid decomposition and give it color.

When we eat meat from the supermarket we have killed but our killing was done by proxy. Because our hands are not bloody our civilized mind does not associate an animal's death with our dining pleasure.

As a hunter, a little of the meat I eat each year is placed on my table directly through my own efforts. I have gained a slight measure of independence because I have killed for myself, butchered my own meat and often, prepare it myself.

I am not alone in this symbolic food gathering. Hunting and fishing magazines are replete with recipes for wild meats. And while many say the natural conclusion of a hunt is the kill, I believe the hunt truly ends with the meal.

Because of the small quantities of meat my legally-sanctioned hunting activity provides each year, I take great care in its preparation. Only close friends are invited to share in the meals of venison or wild duck and they are eaten with the memory perhaps of an early morning's sunrise with the decoys riding the chop and the whistle of wings overhead.

That too is a special part of hunting.

I also hunt for the thrill of an experience done well. If I am able to succeed in bagging a limit of ducks, I have secured meat through a combination of proficiencies, including the proper use of a fire-

arm, camouflage, timing and maybe skill with a duck call.

Sports hunters tend to increase the challenges as they become more skilled. If they are able to take their deer each year with a gun, many find themselves moving on to the greater challenge of the bow.

Most sport hunters return with little to show for their efforts, other than the experience of having hunted. When I am successful, I gain additional independence from other men.

My friend had heard all the arguments hunters have used in the past to justify their sport. He does not agree with them nor did he agree with my thoughts that evening.

While many sportsmen would be tempted to ignore him, branding him close-minded and unwilling to listen, I cannot. My friend is sincere in his campaign to end sport hunting and can cite lists of irresponsible hunter behavior in the woods to justify his belief.

I am afraid of this man and others like him. I am afraid that unless our sporting ethics are strengthened and enforced from within my children will not benefit from the experiences I wish to share with them.

I felt the rough bark of the tree where my back pressed to it and listened to the evil grunts and rapid pops of great jaws that echoed in the stillness.

I had stumbled upon the sow in innocence, though it was her species I hunted. I had no desire to kill her, for to do so would be to slaughter the young pigs with her, pigs now scattered through the thickets and the reason for her wrath. But neither did I wish to be harmed and I knew I would draw and shoot should she seek to press the issue.

She came into the clearing, a great black animal in the gray twilight and as I faced her I came to realize man's basic nature cannot escape him no matter how thick the insulation.

Was her threat real? Perhaps. In any event, there certainly was an imagined threat. I have heard the campfire stories of battles between men and wild hogs.

More important than the incident was the encounter.

When the sow finally turned and ran, her brood gathered behind her, it was almost dark. And in the dark beneath the oak stood a hunter convinced of the richness of his past and the sport that binds him so tightly to his nature. □

Charles Dickey

Non-hunters have a difficult time understanding that the kill is only a part of the hunt, and not the most important part either, for a great many outdoorsmen.

We think you'll agree, this Tampa artist's wildlife paintings rank with the best.

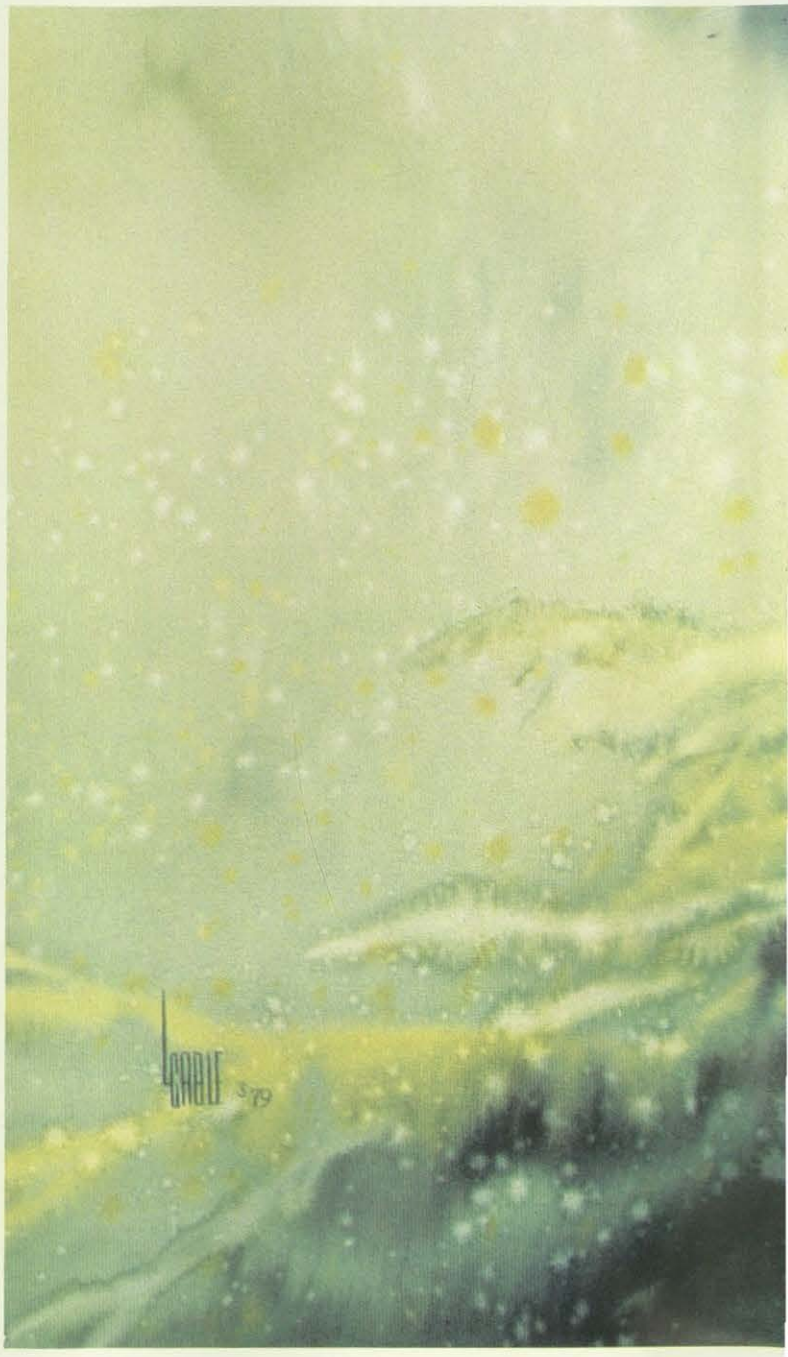
LEE CABLE

By Morrie Naggiar

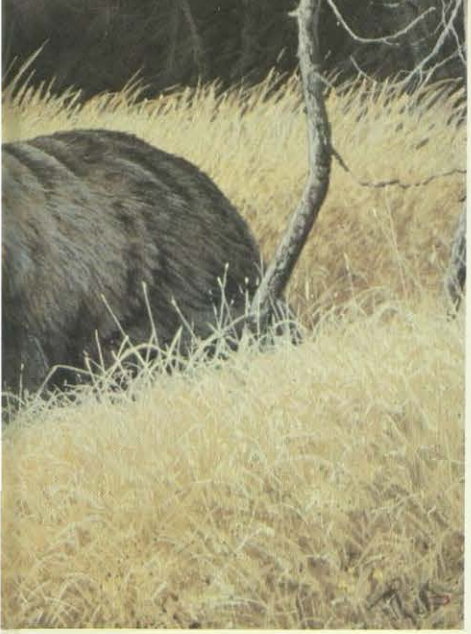
A white-tail on the alert, opposite page, and pelicans in flight, above. Artist Lee Cable at work, left. He maintains a studio at 4206 King Alfred Drive, Tampa, Florida 33610.

Some of the most memorable moments of Lee Cable's childhood were centered around hunting and fishing jaunts with his father in the vicinity of the family's Ohio farm. During that early exposure to the wonders of the outdoors, he began making sketches of what he observed.

By the time Lee was nine, the senior Cable was convinced that his son had definite artistic talent. He prevailed upon local art instructor, Martin Wogaman, to tutor the boy. Over the next several years, the teacher introduced the aspiring young artist to the various media and techniques.



Clockwise from above, proud gobbler surveys scene from roost high in winter-bare hardwood hammock; green heron watches for prey; black bear on the prowl; and largemouth bass appearing ready to take on any passing minnow or plug, are samples of Cable's versatility.



LEE CABLE

After a hitch in the Air Force, Cable and his wife, Doris, (whom he met and married while stationed in Tampa), settled for a while in Greenville, Ohio, where he worked as an art director. Later the couple returned to Florida where Cable worked for a time with a Lakeland advertising agency and then with the *Tampa Times.*

It was while he was with the newspaper that Cable's interest in wildlife art gained considerable impetus. He started writing and illustrating articles on wildlife. Many of these were published by the *Tampa Tribune* and the *Florida Sportsman.*

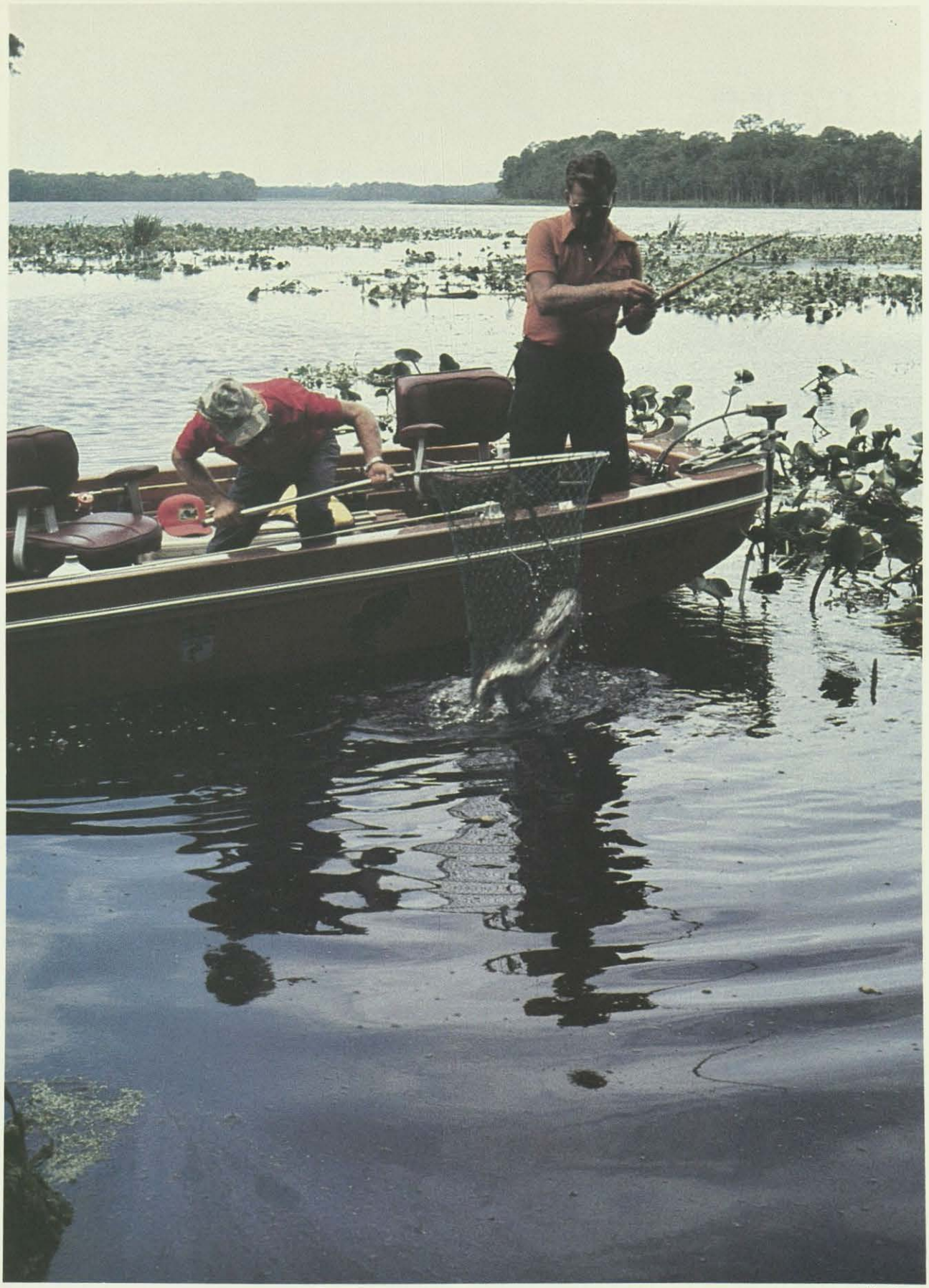
Pintail ducks on a Florida marsh, above. Male wood duck rests on convenient perch in a cypress-grown pond; and a raccoon looks at his world from a weathered trunk, opposite page.

Two successive exhibitions in Ducks Unlimited national shows were highly successful. This offered the extra encouragement he needed to take the plunge he'd been considering for some time. In the fall of 1975, Cable turned full time to wildlife art. His work has been featured in numerous exhibits and he has placed high in art competitions across the nation. An impressive accomplishment was the recent completion of 30 pieces of wildlife art commissioned by a Florida bank. It will be displayed in the bank's new building scheduled to open in 1981.

LEE CABLE

Cable divides his time nowadays between Florida and Colorado. Dubbed "the raccoon man" during earlier shows, he adopted a raccoon paw print as a sort of logo which he frequently works into his paintings.

Looking at the examples of Cable's work presented on these pages, we think you'll agree that he's an artist who will hold his own in any company. □



Kit & Max Hunn

Fishing the lower Suwannee river tidal area for . . . .

BIG BASS

So far it had been a frustrating fishing trip. True, we were seeking largemouth bass in little publicized waters—the delta of the Suwannee River. But we were convinced there were lunker bigmouths around, not only because of grapevine reports, but also because in the first half hour Buck Bray had hooked and lost one that would have gone 8 pounds at least.

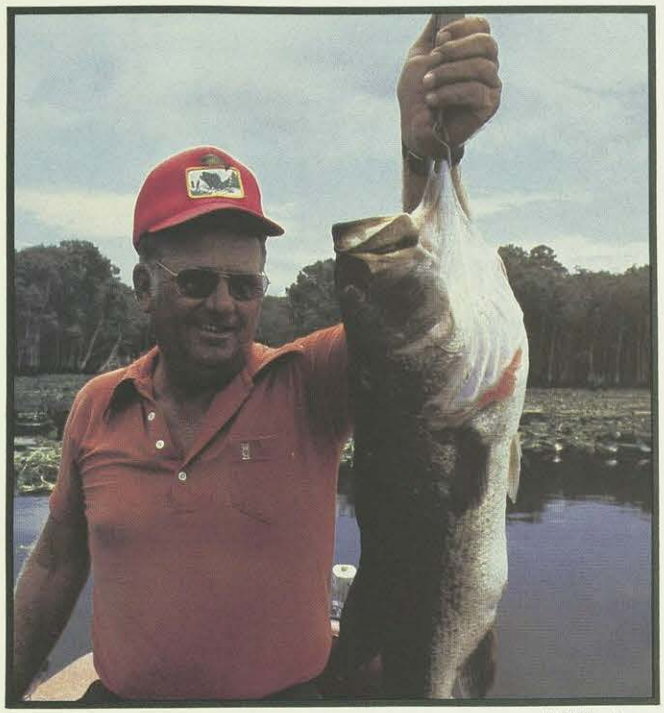
But now we'd been unsuccessfully fishing the bonnets along the main channel of the Suwannee's delta for several hours. We knew other bass were there for we'd had numerous rolls but no solid hookups.

Our sampling of the bass potential at the mouth of the river near the little hamlet of Suwannee was getting hard on our nerves. The big question was—just what would those confounded bass hit?

It was a perfectly logical fishing hole. The depth-finder showed three to four feet of water at the edge of the lilies and bonnets, and then a sharp drop off to more than 10 feet only a short distance away near the channel. Bass love to feed under cover that's near a deep water sanctuary. This area was perfect.

Buck's a professional shiner guide for bass on the Withlacoochee near Dunnellon, but he is also an ardent and skilled worm fisherman. While Capt. Jon Farmer, who was guiding us, and I had switched to other lures unsuccessfully, Buck had stuck with his nine-inch black plastic worm.

Buck flipped his lure to the edge of the huge bon-



Kit & Max Hunn

Capt. Jon Farmer nets an 8-pound largemouth for Buck Bray during a fishing jaunt to the Suwannee delta area, left. Buck reads the Deliar marker on a keeper bass.

By MAX HUNN

net field. As the worm settled among the stems, Buck felt a tap. It wasn't a hard hit but he took no chances. When in doubt when worm fishing, set the hook. He did and the resulting upheaval among the bonnets showed he was tied into a big fish. It takes a big one to create such a rumpus.

Buck immediately applied maximum pressure realizing the bucketmouth intended to head deeper into the bonnets. That's no place to let a big bass roam. The rod pressure halted the fish's surge, then caused it to wallow slowly towards our boats.

Bass that big don't surrender easily, and this one was no exception. Unable to charge deeper into the bonnets, the fish floundered violently on the surface, churning the pads, seeking to foul his 17-pound test line on anything handy.

Now the big bass was tiring. Slowly Buck worked the fish out of the bonnets and alongside the boat where our guide deftly netted the prize. And prize it was—the bigmouth tipped the scale to an even eight pounds, and this wasn't the spawning season. The bucketmouth obviously had escaped other anglers. Her jaw had been torn and healed where other hooks had pulled loose. But this time, Lady Luck frowned on the bigmouth mamma.

However, the fish did not end up in the frying pan. We kept the bass alive in one of the live wells in Buck's boat and released it alongside the dock at Jon's Marine much to the delight of Farmer's children.

Buck's eight pounder was the confirmation we sought of the tales of big bass in the waters of the Suwannee's delta. It had been difficult to pin down information about black bass fishing in the delta because most anglers operating from the little hamlet of Suwannee are saltwater oriented. The Gulf waters here long have been famous for saltwater fishing, so excellent that very few anglers are interested in bass fishing.

The guides are saltwater experts, and until Buck and I met Capt. Jon Farmer while on a black drum fishing trip, we'd been unable to locate any professional with largemouth bass knowledge. Jon's a swing guide—both salt and fresh water—but most of his parties are briny water minded. The word hasn't gotten out very much about the area's freshwater bass angling, although Jon knows of fish as big as 14 pounds being caught in the channels that interlace the country in the vicinity of the little hamlet.

With Jon guiding, we were able to confirm the tales of 10-pound and larger bass being caught in the delta waters. Also we learned the most successful way to land the lunkers is with live shiners, a do-it-yourself bait project.

Shiners usually are not available at the various marinas thereabouts but you can catch your own bait with a little patient chumming and the right touch with a cane pole. We also proved the bucketmouths are not averse to sampling artificial lures, although there's a big difference between sampling and landing.

Before the day was over, Buck was frustrated again when another big bass, probably in the eight pound range, picked up his worm and dove to the safety of the bonnets. Buck couldn't set the hook solidly. He had too much slack line, a guarantee of trouble.

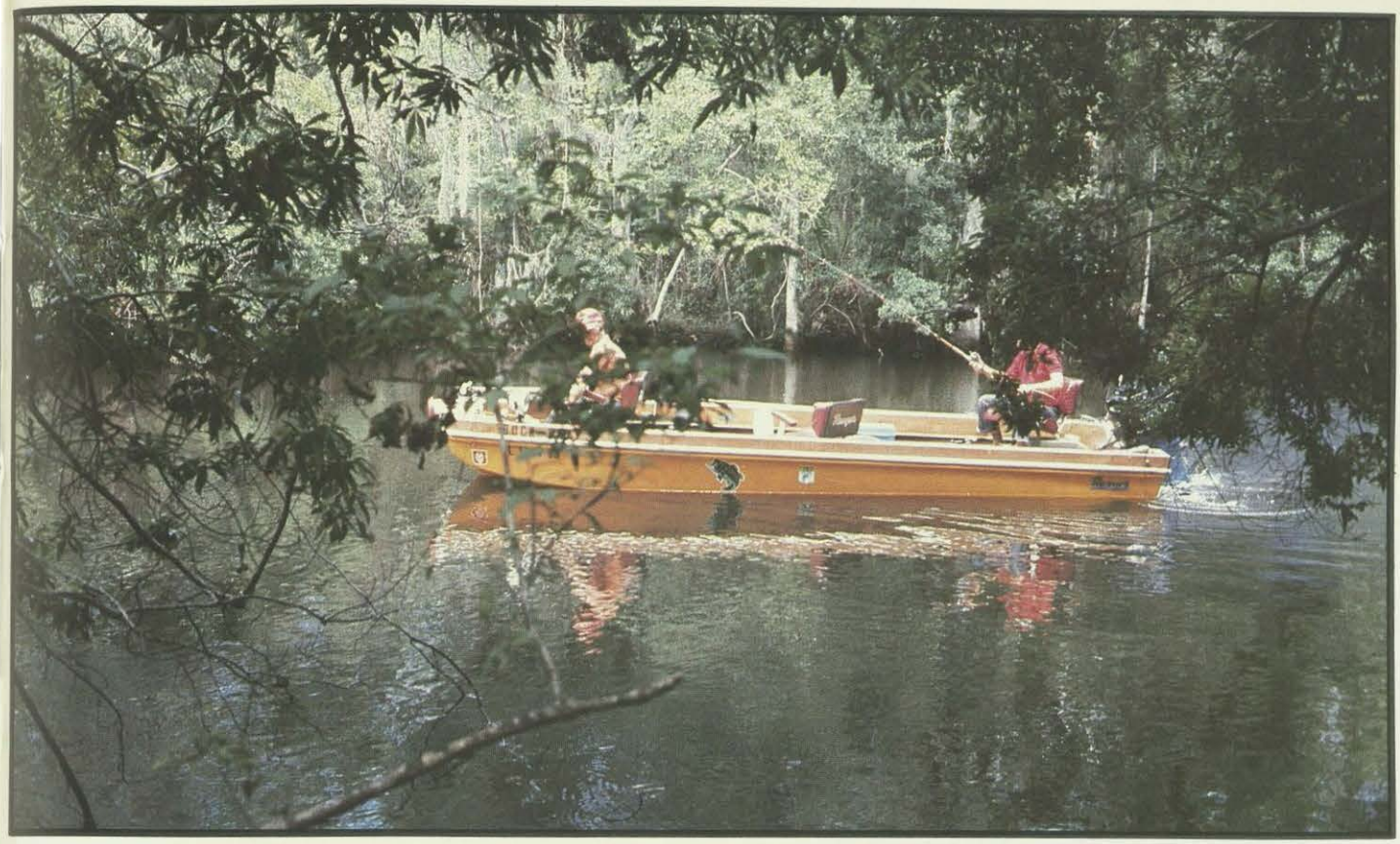
After several more trips in the delta creeks and the main river with Jon, it was obvious there are tricks to fishing the lower Suwannee.

One factor, often overlooked by anglers accustomed to strictly inland waters, is the influence of the tide. The secret of Suwannee success is fishing when the tidal conditions are right. And these won't necessarily coincide with the usual early and late routine.

Bass in any tide-influenced water, feed better when the tide is falling, regardless of the time of day. There's a simple reason. Consider the Suwannee: while the river water is obviously fresh, or near the mouth, somewhat brackish, the tide has a bearing on its movement. High tide slows the river's flow, forcing the water into the overflow swamps where the bait can hide. But when the tide begins falling, the bait fish have to retreat to the deeper river and creeks to keep from being stranded.

The bass recognize this. They know the falling water means it's feeding time and aggressively ambush the bait fish. The rule is fish a falling tide whenever possible. The first half of the ebb is generally the most productive.

Kit & Max Hunn



Kit & Max Hunn

Farmer children look on as Capt. Jon releases a nice largemouth caught by Buck Bray from the waters of the lower Suwannee (left). On the trail of tidewater bass, Buck watches the scenery as Farmer guides the boat (above).

A depthfinder is useful for exploring the numerous creeks, many of which go dry at dead low, particularly with a spring tide. These creeks can fool you. Often they have deep holes where you least expect them, particularly on sharp bends.

The river, too, offers a variety of depths. There are 30 to 40-foot holes, and when these are located near shallow flats covered by lily or bonnet fields or grass beds, they often are prime bass holding areas.

The bigmouths come out of the depths when the tide ebbs seeking food. When you are far enough upstream, a falling tide doesn't necessarily mean a radical change in depth, but it does mean improved water movement, always a factor in bass fishing.

You probably can score with most any bass lure at some time in the delta, although Farmer prefers three lures—plastic worms, Devil's Horse in shad-colored and the yellow and black patterns, and a Snagless Sally with a yellow skirt.

We've caught bass with the lures he recommends, but I've also caught Suwannee River largemouths with a white-skirted buzz bait run just under the surface, and with a white-skirted spinner bait with silver blades.

The color of your lures depends upon the color of the water. Under normal conditions, the water looks dark, but it is clearer than it appears at first glance. It's stained, and with the black bottom in the creeks that meander through the cypress swamps, it looks almost black. But it isn't. As a result, light colored lures work very well.

It's a good idea to have a guide on your initial delta trip. One can save you time. Captain Jon Farmer of Suwannee is the only bass guide I know of at the moment, although others may get into the act if and when the freshwater bass fishing receives any degree of publicity.

Overnight accommodations are limited. Reservations are advised. There are several fish camps with rental cottages in the vicinity. There's one restaurant, where you can make arrangements for breakfast in advance. There's also a small grocery store where you can purchase snacks for a noon lunch. Very few fishermen return to shore for the noon meal.

If you're unfamiliar with the location of Suwannee, it's at the end of the line on the middle Florida Gulf coast. You reach the unincorporated community by following Florida 349 for 24 miles from the road's junction with U.S. 19 at Old Town.

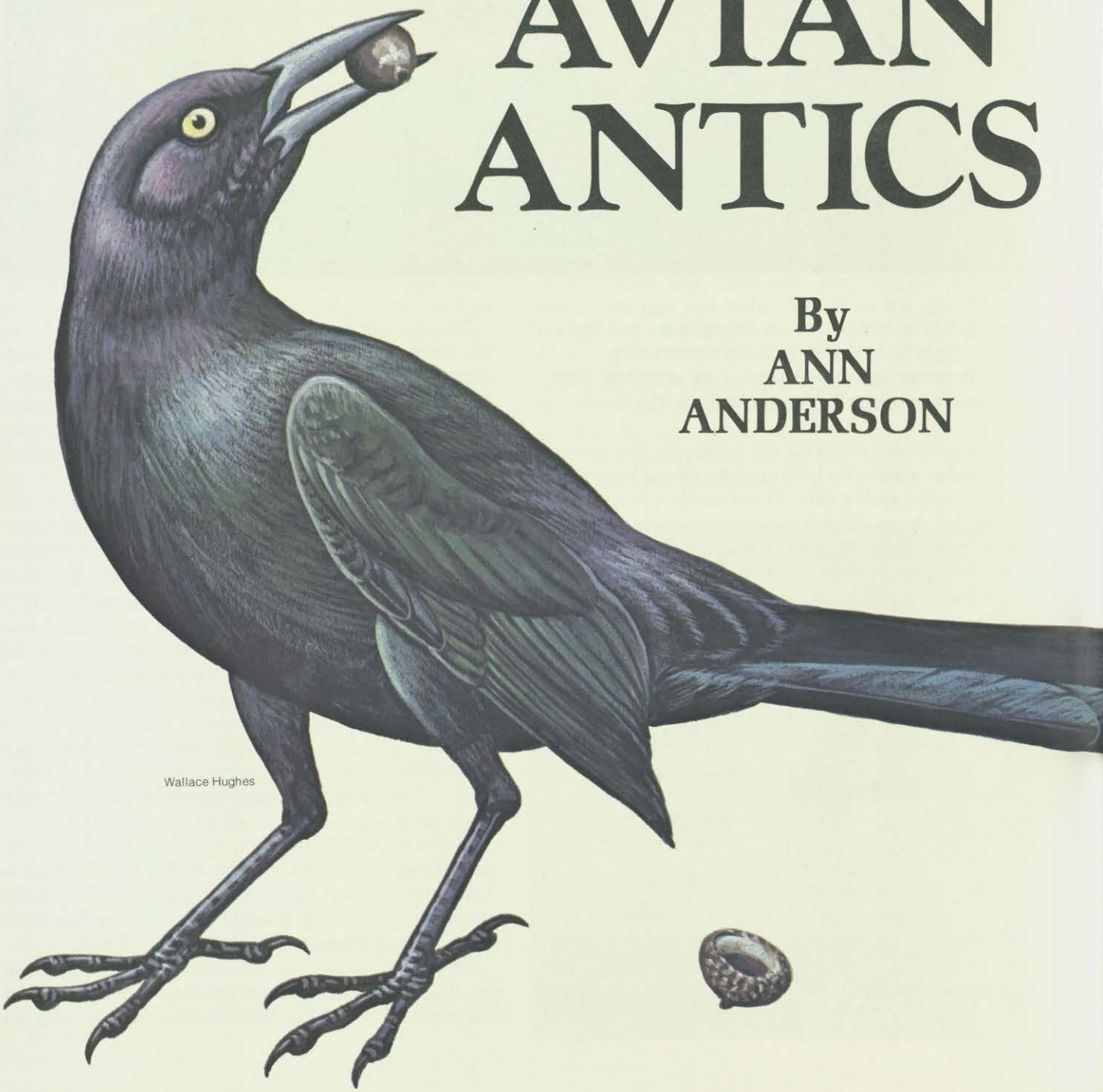
Freshwater angling at Suwannee is overshadowed by the briny variety, but the bass are there, and there are some real line stretchers. □

AVIAN ANTICS

By
ANN
ANDERSON

Have you ever seen a bird picking flowers? A cardinal was having such fun picking the orange-red blossoms from our tecoma vine that we did not disturb him even though he was shattering the clusters. He would bite the flower head off just where it joined the base of the stem, hold it in his beak a moment, then flip it away and take another one. The ground was soon littered with the reddish blooms. When the cardinal flew away, I went to the vine, plucked a flower and held the end of it in my mouth just as he had done. To my surprise there came the delicate sweet taste of honey.

The smartest bird in our neighborhood is the woodpecker. In chiseling out his nest he found an old section of a tree on which some shelf-like mushrooms were growing. His hole is beneath one of these. He is the only bird I know with a ready-made roof over his front door.



Wallace Hughes

Then there was the boat-tailed grackle, with his shiny black coat and bright yellow eye. He was a bird! He stalked into the yard as if he were king of the place. The other birds were enjoying the seeds on the feeder but he preferred acorns. He picked one up from the grass and tried hard to swallow it. After many gulps and gaggings he decided lubrication would help so he took the acorn to the bird bath and dunked it a number of times. After trying again to swallow it, he decided to discard it so he dug a deep hole in the grass with his beak, put the acorn in and carefully covered it, packing the dirt on top. Then he did the funniest thing; he walked away with a shrug as if to say "Who cares?" But I noticed that he walked in a huge circle, returning to the spot where he had buried the acorn. With excitement he dug it up, and thinking to take it by surprise, gulped it halfway down. I thought he was going to choke so I called out "Be careful!" at which he flew toward me and laid the acorn at my feet. I kept it a long time.

Birds sometimes sing happily to themselves. A towhee scratching among the leaves in our woods, hummed a quiet little song. It was scarcely audible to my listening ears. A bluejay resting beneath the shade of a vine on a warm day trilled thru a subdued but exquisite melody all his own. And catbirds can frequently be heard indulging in this soft and lovely music.

Bluejays can be so merry at times. One day while the spray from the hose was watering the grass, in the shade of a small tree no less than five jays enjoyed the shower. They crouched on the ground under the falling drops of water, spread their wings,

Refraction of light gives metallic purple and green tints to the boat-tailed grackle's shiny black coat.

Scratching among the leaves, towhee hummed a quiet little song.

Wallace Hughes

and emitted gurgling cries of delight. Another young jay finally screwed up his courage for the first time to eat from the feeder which was suspended from the roof by a cord. The young fellow swooped on to the edge of the feeder making it go round and round in dizzy speed. He clung to the edge for dear life, his black eyes fairly popping. When the whirling slowed he loosened his grip and sat down in the middle of the platform, gobbling the grain which he thought he so richly deserved.

Along a road in central Florida, the Highway Department had planted about thirty palm trees, watering each tree abundantly as it was set out. We were greatly amused to note that under each palm stood a solitary meadowlark, cooling his feet in the damp earth, grubbing for insects which rose to the surface, and occasionally sounding his thrilling call into the summer air. Each palm had its bird, but no

Some shenanigans by our feathered friends prove that birds really do enjoy themselves.

One old gull cackles outrageously every time she catches the bread we toss to her.

tree had two of them. It was as if they were playing ball with a man on every base.

Mockingbirds are a continual delight. One smart one learned to come to the feeder when a small bell was rung signifying raisins. And he also liked to ride the clothesline as the wash was hung out. The line worked on a pulley, so he would ride five or six feet then fly back to the start, ride another five feet and fly back. He really seemed to enjoy getting this free roller coaster ride.

A favorite perch for the mockingbirds is the top of a telephone pole. In spring they can often be seen there "bouncing" four or five feet in the air in an ecstacy of song. And it is delightful to see them in full song in the birdbath during a heavy shower. As for moonlight nights — their music is almost unbearably lovely.

The vocabulary of these mockingbirds is interesting; they seem to have a "speaking" acquaintance with cats, dogs, squirrels, and many other birds. I have heard them imitate the sounds of as many as ten recognizable birds in thirty seconds. They can sound like people too. One June morning I heard one calling from the top of his pole, "TREE! TREE! TREE!" He kept this up so long that I finally went out into the back street to investigate, and "what to my wondering eyes did appear" but a royal poinciana tree which had burst into bloom overnight. That bird!!!

It is said that hummingbirds especially like red, and that if you want to attract them to your home you should plant red salvia, cardinal flower and cypress vine in your garden. We do not have these flowers around our mountain home in North Carolina, but hummers come any way to sip nectar from jewel weeds, turtle-heads and even brown-eyed susans. On two different days, as I was standing in the yard wearing a bright red sweater, a hummer came buzzing up to within six inches of my red sleeve and hovered there for a few seconds. Then, realizing that there was no honey there, he left me with an angry zoom. But I didn't mind because for a few moments he had made me feel like a flower.

Catbirds have a lot of curiosity. They are always first on the scene when we arrive at our mountain cottage, seeming to want to prove to themselves that we are the same people who fed them crumbs last summer. They hop from twig to twig thru the rhododendrons, going down to the creek for water, then back up the mountain path. At the foot of the steep trail we have a cord which is attached at its other end to a small cow bell on the high porch. Visitors about to climb the path can ring the bell first to see if we are at home. Sometimes mischievous children ring the bell and run. This became somewhat trying last summer as I had to put down the morning paper, or the apples I was peeling, and go to look over the rail for visitors. Nobody there! This went on for several weeks then the children departed to their homes in the city. The next day was quiet. But on the second, third and fourth days the bell rang loudly but still nobody there! On the fifth day I happened to see that catbird coming up from the creek and perching on the bell-pull—not once but twice, and his black eyes shown sparkling thru the bushes, as if to say, "Ha, ha, I can get a rise out of you too!"

At the beach there are always some birds having a good time. One old gull cackles like a witch with outrageous laughter every time she catches the bread we toss. And it makes earth-bound people envious to see the man-o-war birds majestically circling over head, riding the thermal air currents higher and higher with scarcely a flap of their huge wings.

The bird I would put at the top of this goodtime list is a grebe or hell-diver as he is often called. Being such a fine swimmer and expert diver, it was strange but delightful to catch him in a moment of play. While fishing off a pier, I was enchanted to see this bird in the water below. He would dive, then surface, and turn on his back with all his white belly showing. In that position he would kick the water with one foot, making himself go in circles, all the while dipping up water with his beak to sprinkle over his white feathers. He would throw his head back and it looked just like he was laughing. Maybe he was! For I am sure that birds do enjoy themselves. □

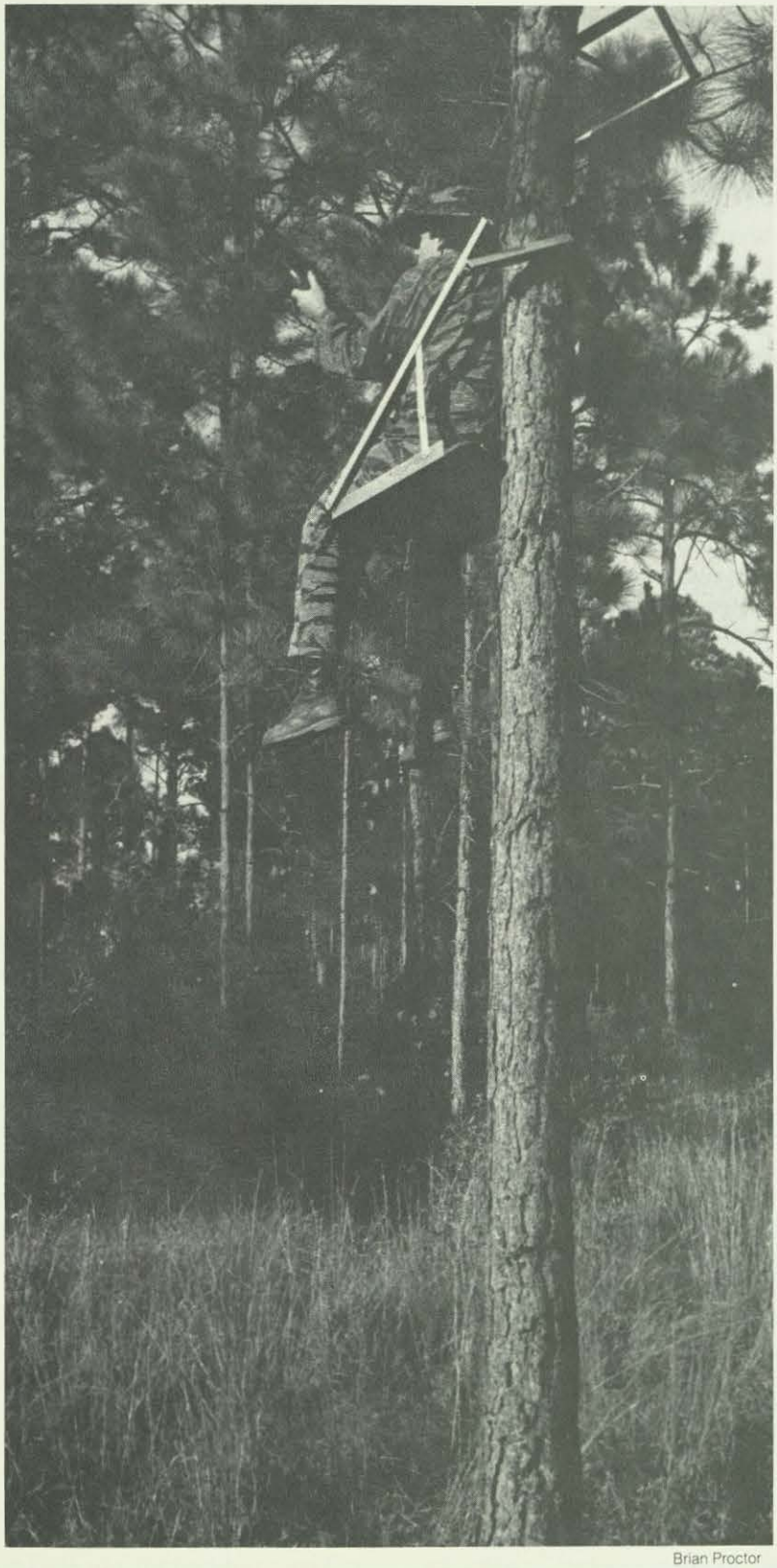
tough luck buck

From my stand 20 feet up in a longleaf pine, I watched the darkness slowly fade. Shadowy blobs on the ground below gradually resolved into trees, bushes, stumps, and palmetto clumps. There were faint twitterings and furtive rustlings from the underbrush. A woodpecker tapped tentatively on a snag, warming up for the day's foraging. Muted by the distance there came the cawing of a flock of crows moving off their night roost.

Just across the way was an oak hammock around the edge of which I'd noted a number of fresh scrapes and rubs while scouting the country the previous day. It would be an easy shot if the buck made his rounds this morning.

When the sun slipped up over the horizon, its rays hit me full in the face. Time to shift the stand. Slowly and as quietly as possible, I began to maneuver the platform around the tree. I was almost in position when there came a slight pop and, with a woosh and rattle of bark, the stand cut loose and dropped to the ground.

by h.g. mehaffey jr.



Brian Proctor

It happened so fast I didn't have a chance to be scared. If not for having held onto the hand climber, which did little to slow my fall but did enable me to hit feet first, I might well have landed on my back. The impact of hitting the bottom broke my grip on the climber, though, and I flopped onto my back with my feet still held in the straps of the stand. The platform hung on the trunk a foot above the ground.

For a few moments I lay motionless trying to decide if I was hurt. I wasn't—not too badly anyway. A pain in my left leg, though, suggested a pulled muscle. It could have been worse. Now I was faced with the not-so-simple chore of releasing my feet from the straps of the tree stand.

I was determined not to let the fall ruin my trip. But assuming that any deer in the vicinity had pulled out after all the commotion, I hobbled toward an oak ridge about a half mile away hoping for better luck.

There was a great deal of sign on the ridge. After an hour on stand however I'd seen only two does. Since I figured it would take me a good hour to limp my way to the car, I called it quits for the morning.

Everyone at camp allowed that I'd been lucky to escape the experience of the morning relatively unscathed. That didn't do too much to smooth my ruffled disposition, however. Especially since one of the club members had downed a nice seven-point buck and another had racked up a turkey gobbler.

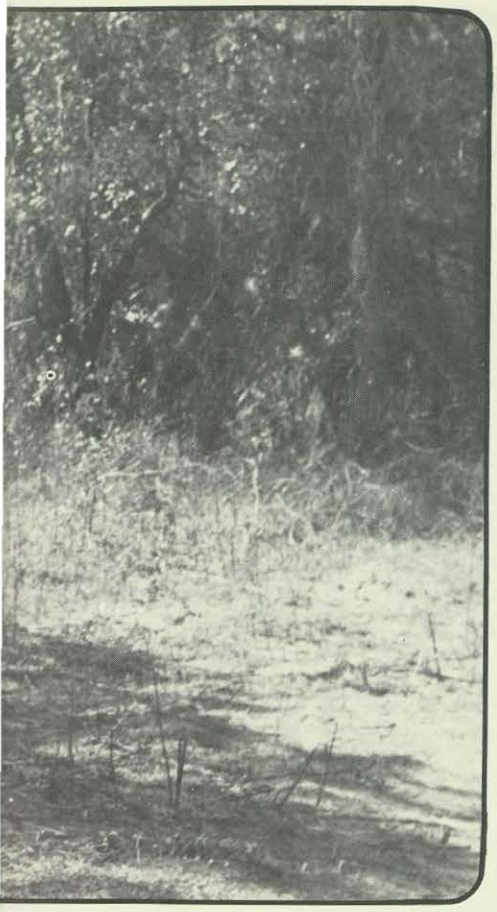
After lunch and a rest, my spirits were again on the rise. My leg was giving me a fit, though, and it was obvious I wan't going to be able to handle any long distance hiking during the afternoon hunt.

I thought the situation over a bit and decided to try an area of sandhills covered with turkey oaks, bordered by planted pines and edged on three sides by creek swamp. A nice eight-pointer and a handful of hogs had been taken there the past season.

Since it was fairly close to a road, it wasn't too much of a struggle to reach the spot. Because I would be on the ground instead of in my tree stand, I made a special effort to be well camouflaged.

I settled down at a stand where I'd called up some turkeys three weeks before while hog hunting. On all sides were saplings that had been rubbed by a buck. Most of the rubs were fresh but there were also some old ones that appeared to be from the previous season. That lead me to believe the area was heavily used by at least one buck.

By the half-hour after sunset quitting time, I'd seen only a lone armadillo poking through the leaves looking for insects. Back at camp I chatted with Tom Rogers as he finished skinning out an



A deer heads for cover at full throttle, above. The author poses with his tough luck buck at the end of the hunt, left. Below, the trophy deer, in all of its glory, after mounting.

eight-point buck he'd taken that afternoon. At least someone was having some luck.

After a relaxing dinner and a session of camp talk around the fire, we turned in. I had some difficulty getting into the top bunk because it was painful to put much weight on my left leg. I worried that my leg muscles might stiffen up during the night and make it impossible to hunt the next day.

Sometimes it's tough to get up at 4:30 even when you're in top shape and anxiously looking forward to a hunt. This particular morning, with the sprain acting up, I was giving serious consideration to passing up the hunt altogether. My hunting partner, Buddy, began needling me about being lazy so I decided to at least make an effort. I rolled out of bed in slow motion, being careful to keep as much weight as possible off my ailing left leg.

After a quick breakfast I rode to the hunt area with Buddy in his pickup. As I walked down an old logging road to my stand, I passed the game trail that led to the creek crossing, but decided to pass it up in favor of the area where I had hunted the evening before. With a bit of judicious use of my flashlight I found the spot and got settled while it was still dark.

With the coming of good shooting light, I gave a few yelps on a diaphragm turkey call. I usually do this even when primarily hunting for deer; the technique has produced a turkey or two over the years.

While still listening for an answer, I heard some deer blowing with that peculiar whistling snort deer make when alarmed. The animals were not visible through the high gallberry and palmetto brush but it sounded as if they were about 200 yards away. Judging from the sound, it was three or four deer.

The blowing was coming from the creek crossing I had decided not to stand. At that moment I would have given plenty to have been at the creek. Before I could mull over the matter too much, I heard the sounds of running deer coming toward me. I turned to face the sound. The animals stopped a good hundred yards off but were still not visible in the heavy cover. I strained my eyes to see a head, an ear, any part of a deer or a movement but could see nothing. They blew again and started running. They were coming dead at me! Now I could see five or six does. When they were some 30 or 40 yards away, I could see a buck trailing behind them. And what a buck he was!

With the excitement of spotting the trophy head, I must have moved about more than I should. The does saw me when they were about 20 yards out. Two of them cut to one side of me, the others ran around me on the other.

The buck stopped about 30 yards away and, from behind a screen of gallberry bushes, looked straight at me. He was the biggest deer I'd ever seen alive—a real monster for a Florida buck. For a moment we stared at one another. I started to raise my rifle in as smooth and as slow a movement as I could muster under the circumstances.

It was more than the deer could stand. He whirled and started to put some distance between us. I knew unless I acted quickly I wouldn't get a shot in the heavy brush. I threw the rifle to my shoulder. As the buck broke into the clearing of a firebreak, I fired. He went down hard and stayed down.

Every hunter knows the feeling. For several moments I stood admiring the trophy. The high, clean sweep of the heavy-beamed rack, and those eight long polished-tip points made this the most impressive buck I'd ever downed. In fact, it was the biggest Florida buck I'd ever seen.

Chances are less than slim that I'll ever get another chance at a buck to equal the one I took on a hunt when everything went wrong except what really counted. □

Hunter Education News

BB guns have always been favorite Christmas gifts, and this year many youngsters will be receiving their first one.Most hunters in America began their shooting careers with these popular guns (also called air guns or air rifles), but unfortunately, some of the rudiments of safe gun handling had to be learned the hard way.

I recall a missed shot at a hanging birdhouse and the resulting starred hole in the dining room window. Yet another memorable event came when a friend's mischievous pull on the trigger sent a BB into the ball of a thumb placed casually over the muzzle.

Other not so bright events took place when the state of the bankroll (read nickel and dime roll) was total depletion, and, unable to afford BBs, we kept on shooting by dropping miscellaneous objects down the muzzle, feeling reasonably sure they'd fly back out when the trigger was pulled. The system was not perfect.

No one ever tried to instill any real measure of safe gun handling in us, and that is a shame because the lessons learned at an early age are most often the ones that endure. Chances are that you're well beyond the air gun age; but then again, maybe you're not, or perhaps you have a son or daughter who enjoys air gun shooting.

If one or more of the above apply, give some though to basic safe gun handling techniques as applied to air guns. The list isn't long, and the rules are reasonable. All basic firearm safety rules apply to air guns as well as cartridge firearms.

1. Don't point the air gun at anything you don't want to shoot, Keep the muzzle pointed in a safe direction at all times.
2. Be sure of your target and what lies beyond it.
3. Use only the proper pellets or BBs for which the air gun was intended, and don't try to reuse them.
4. CO2 cylinders and guns containing them shouldn't be allowed to get too hot. Don't subject them to more than 120 degrees F.
5. If a gun is dropped, check it for damage and dirt before using it.
6. When using a target and backstop, check the backstop for wear before and after using, and be sure that it's used in a location that will be safe, should the backstop fall or the shooter miss it entirely.
7. Unless you're shooting under carefully controlled and monitored conditions, don't ever have a loaded air gun in a house.
8. Never have a loaded air gun in a car or recreational vehicle.
9. Never shoot at a hard, flat surface. BBs and pellets ricochet a long way and can do considerable damage.
10. Florida law prohibits the use of BB guns, air or gas operated guns and firearms by anyone under the age of 16 years, unless that person is under the direct supervision of an adult. Also, any parent or guardian who knowingly allows such use is liable for prosecution.

An excellent way to start the new shooter off safely is to enter him or her in the Game and Fresh Water Fish Commission's Hunter Safety program. For more information, please contact your nearest Game and Fish Commission Regional Office. □

Ed Tyer

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FISHING

By CHARLES WATERMAN

Fish won't bite? Change lures . . .

Some of the sadder tales of fishing concern fish that show themselves, feint at a lure or bait and decide to leave it alone. It's especially frequent with a black bass, which can cause all sorts of eruptions, drive a fisherman into near apoplexy and then retire with what must be a fishy snicker.

I reflected on this matter last spring while casting at the base of an enormous cypress with branches crowding the water. My first cast with a hair bug back in that deep shade brought a swirl and broad flash from down below. My nervous second attempt caused a slight movement of some sort with only a little curl of disturbance. When several other tries didn't produce I picked up a casting rod and threw a huge surface plug with spinners. That brought the fish out again and he struck hard enough but I missed him—if he'd ever had it. After that the big plug went begging and I tried a small popping bug on the fly rod. He splashed at that and then retired for the day. I hadn't scored but I'd done the best I could, following the advice of a hundred years of veteran anglers.

As long as he'll keep coming you have a chance, and resting him for several minutes, or for several hours for that matter, often works. "Resting" is most successful when the fish is a homebody, living next to an obvious obstacle or quirk of current. My fish was evidently living at the cypress. If he'd been in more open water chances are he'd have left after his first foray.

If he boils and doesn't connect, the accepted method is to throw the same thing right back into the same place. Then if nothing happens it's time to change to a completely different lure, bigger, smaller, brighter or duller. Atlantic salmon fisherman are masters of this business. They'll cast all day over the same sleepy fish and mayhap he'll suddenly decide they're showing him just what he needs. They change flies a lot and it's always possible he'll take the original pattern after looking at several others. It's a science with those people.

Many lures are picked up just as the victim is zeroing in, especially in fly casting. I've started my backcast too soon and seen a big bulge where the fly had been. Sometimes you can get him by laying it in exactly the spot where he bulged, but maybe he's already gone back to where he first started from and it's a good stunt to duplicate the cast that first got his attention.

A most dramatic example of an effective switch in tactics involved a couple of guys who were snook fishing in a river on the West Coast and casting to the shoreline.

The fellow in the front of the boat was using a surface plug and couldn't catch any fish at all. The other guy had a small underwater bait and was tearing them up. The surface plug man changed to a similar lure and all action stopped. They finally figured that the snook came out to look at the surface plug and then struck the sinker when it came along. By trading rods occasionally they both had good fishing.

After all, a fish is no Rhodes scholar. After he's decided he doesn't want one lure a completely different bait may trigger his striking button. Many bass fisherman keep two or three rods ready to go, each having a completely different lure. Saves time and often catches fish before they get out of the notion entirely.

The Warmouth

Warmouth perch are not listed as the greatest gamefish in the world. They go under several names, including "goggle-eye" (a name more frequently used for the rock bass) and "stumpknocker" (a name that usually applies to the redear sunfish). Of course they're a sunfish and not a perch at all but fish names are unreliable unless you use Latin.

Anyway, the warmouth is a good artificial lure grabber and has a big enough mouth to hang on to bass lures that would be too much for a bluegill.

Now and then you get into a spot where they run pretty big. A 9-inch warmouth is a whopper and, because it's thick through the middle, is heavier than you'd think. Last spring we got into a spot where the big ones were bunched. It was perfect warmouth country, a river backwater with mud bottom, lots of grass and weeds and plenty of rotting logs in the water.

They seemed to prefer popping bugs but would attack a full-sized Snagless Sally with a piece of plastic worm attached. These were the most consistently large warmouths we'd ever seen. Interesting because most places where they're thick you'll find them stunted, evidently from overcrowding.

The strikes tended to be husky pops and although they may not be quite as active as bluegills they cause some commotion on a light flyrod or ultralight spinning. Most warmouth are caught on bait—

worms, grubs, crickets, etc., and they often live far back under the hyacinth rafts. You can open a hole in the hyacinths, drop a bait in and often find warmouth where they would be in the dark all day long. They'll live in some mudholes that seem to be abandoned by everything else but catfish and mudfish.

They don't have a top reputation as table fare but part of this is because of their tendency for living in smelly mudholes. If you get them from cleaner water they're about as good as other panfish.

Toothy Terrors

Ever since **JAWS** appealed to the American love of gore and horror, fish with teeth have been big news. Besides the sharks there are two Florida saltwater fishes that have been known to take chunks out of people. I'm not trying to be flippant on so serious a subject although some of the less serious attacks can be funny.

The barracuda, which I was discussing a while back, is a good gamefish although sometimes a little scary when noticed eyeing a wader with what seems to be predatory interest. They say barracuda attacks are sometimes blamed on sharks. I can't say that one ever menaced me on purpose although a 20-pound cuda dog-eyeing me while I wade after bonefish makes me nervous. I never liked the biggies that sometimes live in smallboat basins and watch occasional swimmers. Even a happy barracuda looks evil.

In his way the bluefish may be the most dangerous of all and bluefish attacks are very real possibilities when they're in feeding schools. Nothing seems to consume everything in its path more efficiently than schooling blues, turning the water red when they corner baitfish and allegedly regurgitating one meal for the pleasures of downing another. I am not sure if this cough-up procedure is deliberate or if bluefish are just naturally sloppy. Their attacks on south Florida human bathers are documented.

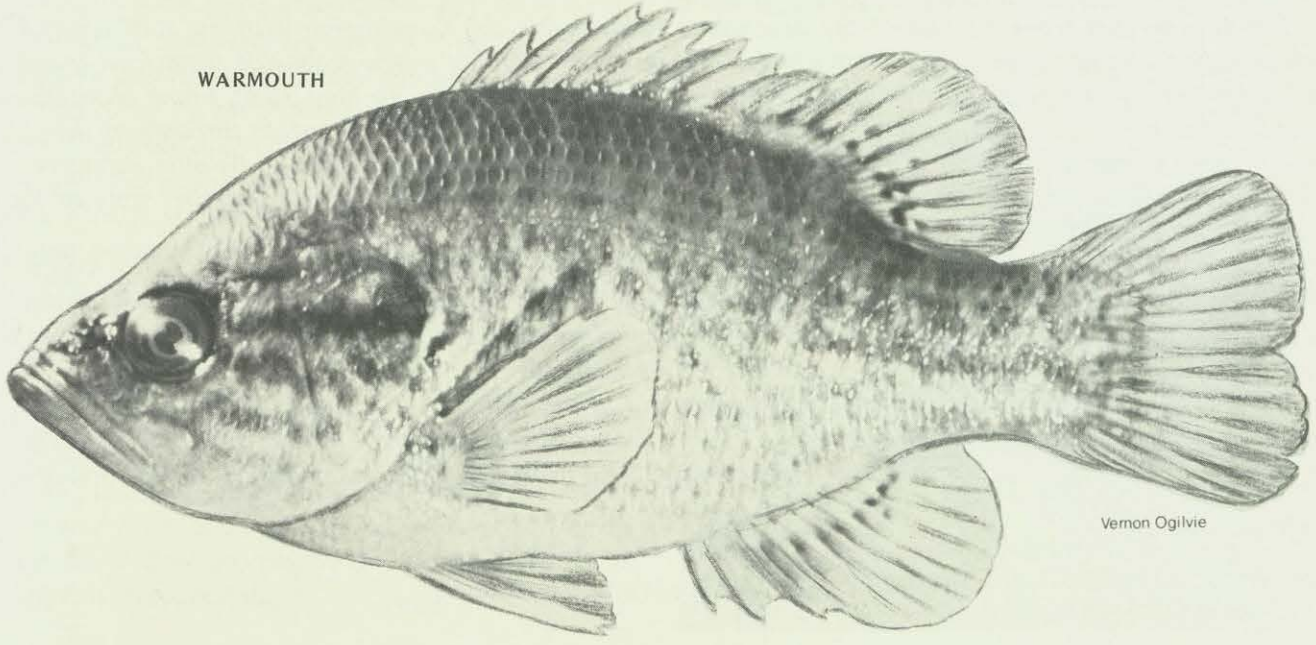
I do not believe the big fish are as dangerous as small ones. The small blues run in tight schools and competition for food is what makes them dangerous. If the water is a bit cloudy and human fingers, toes, arms and legs flash intermittently an excited bluefish can be non-selective. Bigger fish school too but the real whoppers are more likely to be loners.

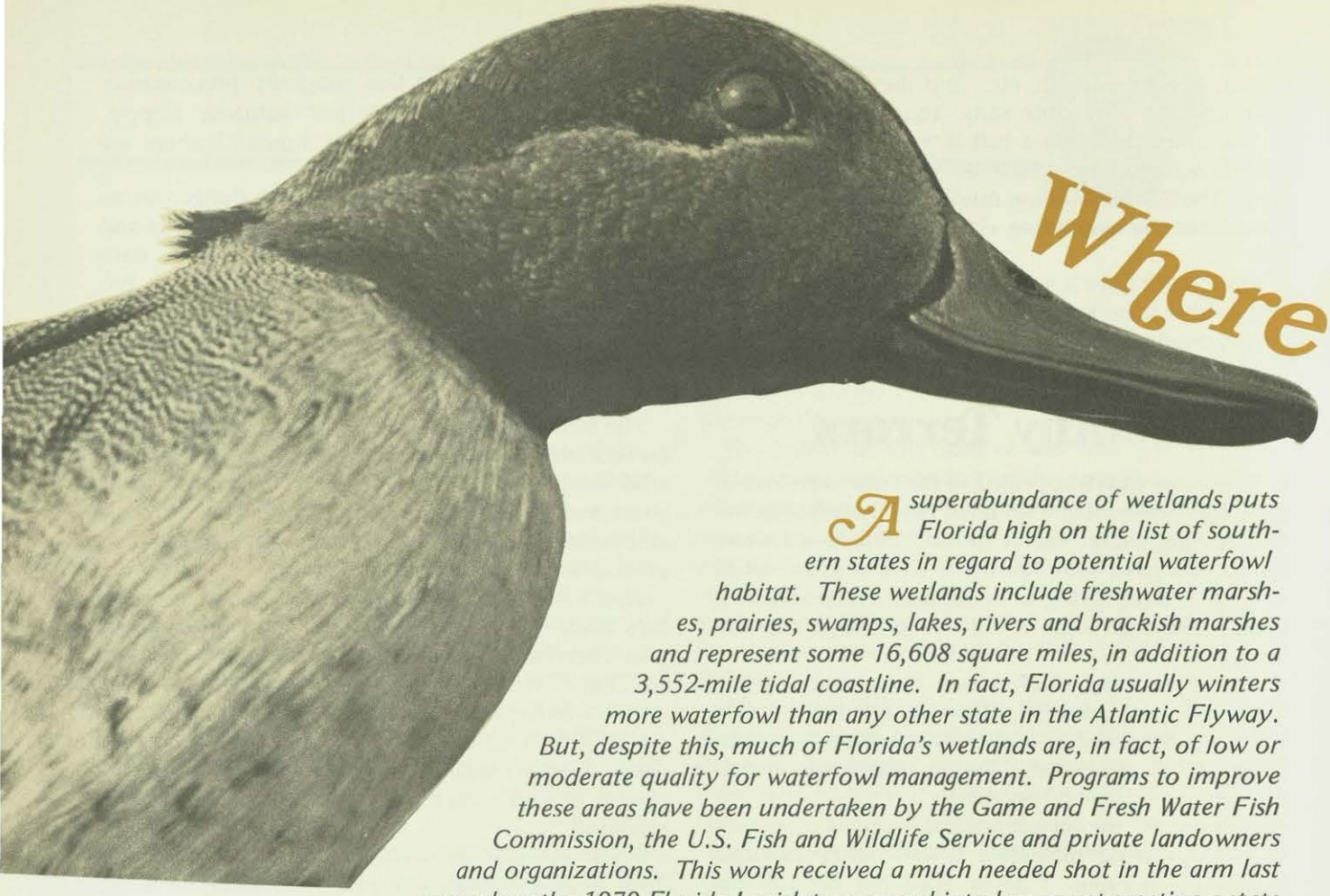
The biting efficiency of blues is legendary and my favorite story concerns the test run by Hal Lyman, who wrote a definitive book on bluefishing a few years back. Lyman said that a 5-pound bluefish was able to snip off a Number 4 leader wire—which tests around 38 pounds.

And a bluefish keeps gnashing his choppers after he's landed. It's believed he actually tries to get at you when he's on the deck or bank and that he sees well out of water. I don't know about that but many an over-enthusiastic fisherman who has yanked a whole bunch of blues into his skiff has found his deck covered with snapping assassins and has chosen to find something to climb up on until they subsided.

Fresh bluefish is loved by some seafood fans. They have a reputation for keeping poorly in refrigeration, though, and probably don't rank above mediocre as food.

Bluefish are fighters and strike a surface plug with scary ferocity. Last spring I fished with Charles Ernst in Canaveral Harbor at dawn. We threw surface plugs against a stone seawall and the strikes were explosive. Those fish went from 6 to 8 pounds and there were bigger ones around. An 8-pound blue should be handled with care—or not handled at all.□





Where

A superabundance of wetlands puts Florida high on the list of southern states in regard to potential waterfowl habitat. These wetlands include freshwater marshes, prairies, swamps, lakes, rivers and brackish marshes and represent some 16,608 square miles, in addition to a 3,552-mile tidal coastline. In fact, Florida usually winters more waterfowl than any other state in the Atlantic Flyway. But, despite this, much of Florida's wetlands are, in fact, of low or moderate quality for waterfowl management. Programs to improve these areas have been undertaken by the Game and Fresh Water Fish Commission, the U.S. Fish and Wildlife Service and private landowners and organizations. This work received a much needed shot in the arm last year when the 1979 Florida Legislature passed into law an act creating a state waterfowl stamp. Proceeds from this $3.25 stamp (which is required for anyone between 15 and 64 taking waterfowl in Florida) were earmarked to better manage the state's waterfowl resources. The money derived is divided three ways: 70 percent for waterfowl management and development of potential waterfowl areas; 25 percent for waterfowl research and five percent for administrative costs of the management program.

Also included in the act was the creation of a Waterfowl Advisory Committee to consult with and advise the Commission on expenditure of the waterfowl stamp funds. Committee members are appointed by the Governor, Speaker of the House and President of the Senate. Current members include the chairman, Kenneth Hurley of Daytona Beach, Robert L. Voges also of Daytona Beach and William B. Wiley of Tallahassee.

Funds generated from the sale of the new stamp will provide the Commission with the staff needed to adequately assess and manage the state's waterfowl resources. Hiring a new statewide waterfowl management biologist was a necessary first step toward program improvement. In May 1980, Frank Montalbano was hired in this capacity. His primary responsibilities are to identify waterfowl needs throughout the state and prepare plans for these areas to be implemented by biologists from the Bureau of Wildlife Resources or the Bureau of Wildlife Lands Management. Plans will also be developed for use by other state or local governmental agenices as well as private landowners.

Since his hiring, Montalbano has been actively investigating areas throughout the state which could be improved for waterfowl management. These waterfowl habitat inventories and assessments will result in a portfolio of existing areas with potential for management at limited expense, plus a detailed evaluation of the problems, costs and feasibility of managing these wetlands.

Through the proper assessment and management of state wetlands, it is hoped there will be a greater resulting concentration of wintering ducks. This will benefit the waterfowl hunter directly by providing higher quality hunting on areas not previously managed and providing better management on existing areas.

by Thomas M. Goodwin
Chief, Bureau of Wildlife Resources

Your Duck Dollars Go...

Many areas throughout the state are being evaluated with respect to their waterfowl potential. A waterfowl management plan to improve Hickory Mound Impoundment has been developed. Other areas around the state such as Guana River Wildlife Management Area, the Everglades Conservation areas, and Arbuckle Marsh (Avon Park Wildlife Management Area) are being assessed for waterfowl improvements. New areas such as the mosquito control impoundments in Volusia, Indian River, St. Lucie and Martin counties, are being investigated. Salt marsh impoundments, identical to those that support excellent waterfowl populations on the Merritt Island Refuge, occur all along the east coast. Contacts have been established with the appropriate county and state agencies with an eye towards managing certain of them to enhance waterfowl habitat and recreational opportunities.

Contacts have also been initated with the South Florida Water Management District to develop waterfowl oriented recreational opportunities on Ritta, Torrey and Kraemer islands in Lake Okeechobee. The 100,000 acres of state-owned marsh within the levee offer outstanding potential for waterfowl habitat improvements, possibly through regulated grazing pressure.

Information is still being sought on possible locations for management. Some 300 questionnaires have been mailed to biologists, citizens and organizations soliciting information. Persons knowing potential sites can contact Montalbano in care of the Game and Fresh Water Fish Commission, Waterfowl Management Study, 638 Kildare St., Port St. Lucie, FL 33452 (305) 878-3930.

Twenty-five percent of the stamp revenue goes towards research conducted by the Bureau of Wildlife Research. Much of this is carried out at the Gainesville Research Lab under the direction of Tommy Hines. Among the studies funded is one concerning die-offs of waterfowl on some phosphate pits. These phosphate settling ponds are very attractive to wintering waterfowl and present excellent hunting opportunities. Based on preliminary investigations by the bureau and the School of Veterinary Medicine at the University of Florida, avian botulism may be a serious source of mortality for the birds using these pits. Research is under way to determine the causes of, and possible solutions to, the problem.

Plans are also currently under way to assess the effects of lead poisoning on ring-necked ducks wintering in Florida. Studies concerning the Florida duck and the wood duck are also being conducted. The latter studies are designed to identify various sources of mortality of these species as well as measure the effects of harvest and identify factors that may influence annual production, particularly in relation to duckling survival. Biologists also conducted statewide teal surveys during September to gather data on specific areas of concentration. The information will be presented to the U.S. Fish and Wildlife Service in the hope of obtaining an early teal season next year. Florida's migratory and resident Canada goose flocks are being monitored by the Bureau of Wildlife Resources under a separate project.

A word of caution should be given. Although all these efforts are now under way, it could be a year or two before Florida duck hunters see the impact of the overall management program. There is one fact of which Florida duck hunters should be very aware—Florida hunters annually harvest more ducks than any other state in the Atlantic Flyway, with the single exception of New York.

Management and research dollars from the sale of the state waterfowl stamp are hard at work and such endeavors as an early teal season, new hunting areas and a more thoroughly and properly managed waterfowl resource are close at hand. □

Jim Floyd

CONSERVATION SCENE

Austin

Schwikert

Williams

three of our finest spotlighted

Biologist David Austin of Lake Placid has received the 1980 Wild Turkey Restoration Award from Penn Woods Products Inc. Austin was cited for his 20-plus years of efforts in restoring turkeys to unoccupied habitats in Florida. He was also involved in the early development of many trapping, transporting and release techniques now used by other states in turkey work. The overall result of this work enabled Florida to complete restoration efforts long before any other state.

Steve Schwikert has been selected by the Division of Wildlife staff as Wildlife Manager of the Year. He has been a valuable asset to the Central Region wildlife land management program. having become proficient at counting deer abomasal parasites as well as handling the majority of the APC lab work the past year for the Central Region.

Also honored was Vince Williams of the Division of Fisheries who received the Florida Wildlife Federation's Wildlife Conservationist of the Year award at the annual meeting September 20. Williams is best known throughout Florida for his tireless efforts to help save its fisheries resources particularly Lake Tohopekaliga.

in brief:

Col. Robert M. Brantly is serving as this year's president of the Southeastern Association of Fish and Wildlife Agencies. He will hold the office until April, 1981.

■

Northeast Region enforcement report for August lists several taxidermy shops that were checked in a coordinated effort by wildlife officers and inspectors. Bagged were the following contraband items: six black bear hides, six fox hides, one red-shouldered hawk, three owls, one kingfisher, and a bag of marijuana.

■

During August, wildlife officers made 970 arrests compared with 633 made during the same period in 1979. Much of the increase reflects the 556 arrests for fishing without a license. During August last year, 300 arrests were made for the same offense.

■

Attendance at the GFC Youth Camps was up from last year with 1,764 camper weeks. This was made up of 1,211 children from 39 counties, with many attending more than one week. Next year, there will be a maximum two-week stay for any one child since some children are having to be turned down. In addition, due to rising costs, the fee has been increased to $75 per week. By and large, 1980 was the most successful year ever for both camps.

■

One of the most beloved aspects of Florida is its shells. And for the shell lovers of our state, there's a perfect Christmas gift. It's called the *Shell Desk Diary*, an attractive, hardbound 160-page book now in its 23rd printing. It's got 32 pages of full-color photography and art, dozens of exquisite centuries-old engravings and is informative and descriptive throughout.

It's 7"x7½" and has a week-at-a-glance, month-at-a-glance and a 3-year calendar. It's the kind of

MOVING?

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desk diary you don't feel like locking away in a drawer, although your friends might be tempted to walk off with it. Put out by Rutledge Books/Galison, 25 West 43rd Street, New York, NY 10036.

ID Test for Deer Tissue

Sergeant Barry Cook, with the help of two University of Florida professors, has perfected a sex test for identifying deer tissue. This breakthrough has the same potential as the "ouchterlony analysis" he helped perfect several years ago.

Although the procedure has been used to determine sex of human tissue, this is the first time it has ever been adapted to sexing white-tailed deer. This test should prove to be extremely valuable this hunting season in solving "unidentifiable meat" cases.

Mining Rule is Passed

Over three years of phosphate technical assistance and reclamation research by the Office of Environmental Services were rewarded by the passage of new mining reclamation rules on August 26. The new rules provide that, for the first time, fish and wildlife habitat will be considered in the planning of reclamation programs. Terry Gilbert, Tim King and Brad Hartman had prepared recommendations to the Department of Natural Resources on upland and wetland revegetation, lake design and overall fish and wildlife considerations that were included, almost verbatim, in the final rule. Division of Fisheries personnel also provided valuable assistance on lake design standards.

Three are Named to Committee

Three Floridians have been named to the Wildlife Alert Reward Association by Colonel Robert M. Brantly, executive director of the Florida Game and Fresh Water Fish Commission.

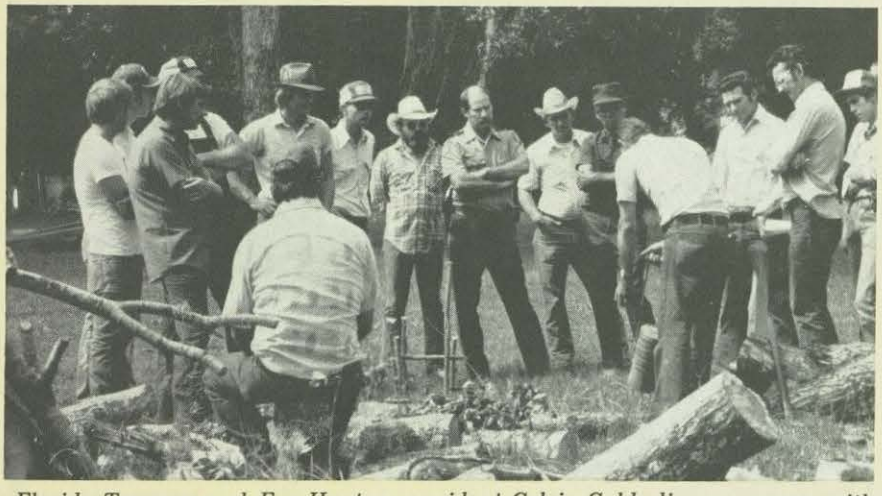
Named to fill vacancies on the citizen committee are Peter R. Mott, Maitland, Charles Webber, Indian Rocks Beach and Charles Kroll, Gainesville.

Mott is president of the Florida Audubon Society. Webber is affiliated with the Wyoming Antelope Club, and Kroll is with the Fred Bear Sports Club.

The Wildlife Alert Reward Association is a 13-person citizen committee which oversees the program. Wildlife Alert rewards persons who report violators of Florida wildlife and fisheries laws.

Since the inception of the Wildlife Alert program in November of 1979, the Division of Law Enforcement has received strong citizen support. Nearly 1,000 Wildlife Alert calls have been received from concerned conservationists as of the nine-month report September 12, 1980.

The calls led to the arrests and apprehensions of some 200 violators of state fisheries and wildlife laws. Eighty rewards were paid from the Wildlife Alert fund for a total of over $13,000.



Morrie Naggiar

Florida Trappers and Fur Hunters president Calvin Cobb discusses snares with association members at a recent meeting.

fur trade flourishes

Fur trade a thing of the past in Florida? Don't you believe it. During the 1979-80 season, some 1,655 licensed trappers and an undetermined number of hunters pelted and sold at least 54,760 furbearers representing six species. Fur buyers paid trappers and hunters over $691,000. The totals are considered to be minimal, based on Florida fur buyer reports. Many pelts are sold out-of-state and no reliable data is available on these but the quantity is believed to be substantial.

The raccoon topped the state fur harvest list both in value ($514,000) and in numbers taken (42,840). Others in order of their total fur value include otter, bobcat, opossum, beaver and mink. Skunk and nutria make up an insignificant portion of the annual harvest. Neither red nor gray fox may be legally taken in the state.

SEASON'S GREETINGS!

As we come to the end of another year, we look back with joy upon some gains for our valued wildlife resources. A note of sadness creeps in when we examine the other side of the ledger, for there again were some losses. But overall, during this season of endings and beginnings anew, there shines hope for the future because you care about what happens to our wildlife. Best wishes for the New Year from your. . .

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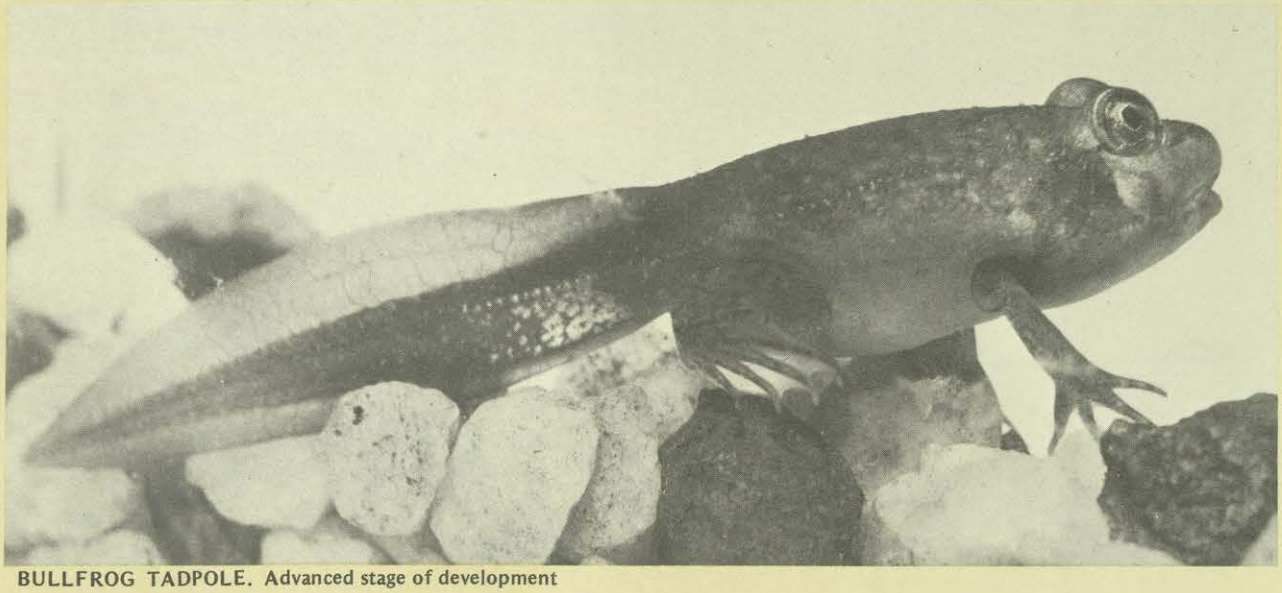
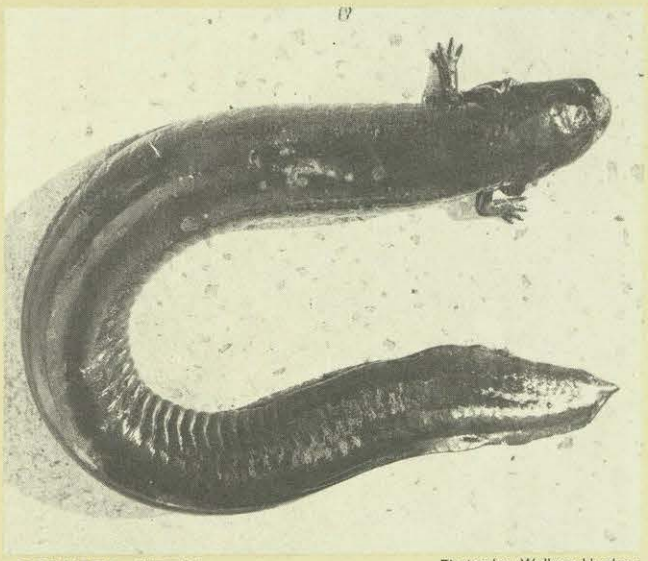


BULLFROG TADPOLE. Advanced stage of development

AMPHIBIANS

To the casual "critter" watcher, most of the amphibians are lumped mentally, and not infrequently with shudders of revulsion, into a grouping unscientifically referred to as creepy crawlers. Frogs and toads are familiar representatives of the group. Salamanders are less frequently recognized and sirens obscure enough that a sighting or capture not uncommonly brings a call to help identify the unknown creature.

Most amphibians lead double lives, spending part of their time in the water, part on land. Most everyone who has spent any time poking around streams and ponds is familiar with the gelatinous egg masses deposited by various amphibians. Whatever their true origin, they're usually noted as "frog eggs."



GREATER SIREN

Photos by Wallace Hughes

SLIMY SALAMANDER

Three Florida amphibians are illustrated here. The tadpole of the bullfrog is conspicuous because of its large size, up to six inches long. Egg masses form a film on the water surface and a female may produce 20,000 eggs. Bullfrogs are cannibalistic, a factor that keeps numbers down even under the best conditions.

Sirens spend their lives in the water. Oxygen is absorbed through the noticeable external gills. A pair of small forelimbs extend from the sides of the body. The animal reaches three feet in length. They may survive the drying up of their home pond by burrowing into the mud, reviving when the water is restored.

The slimy salamander is aptly named for the glue-like consistency of its skin secretions. Adults of the species may measure a bit over seven inches. Having no lungs, they breathe through their skin.

Wary and retiring in nature, the hooded merganser shows a preference for streams, wooded ponds and sloughs. The large, fan-shaped crest, which is white bordered with black, is the outstanding feature of the adult male. Food consists of a variety of animal material, mainly fishes, aquatic insects, crustaceans and bivalves. From a painting by Lee Cable.